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DEFENSE ATOMIC SUPPORT AGENCY WASHING
BIKINI SCIENTIFIC RESURVEY. VOLUME II
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REPORT OF THE DIRECTOR --ETC(U)

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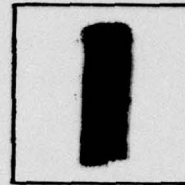
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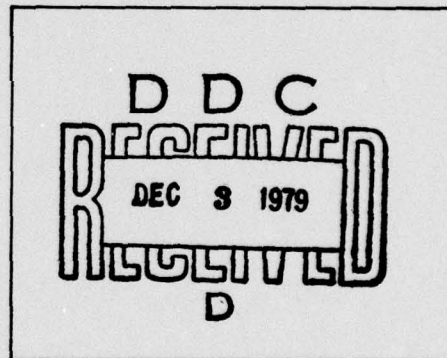
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TECHNICAL REPORT

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REPORT OF THE DIRECTOR
OF SHIP MATERIAL

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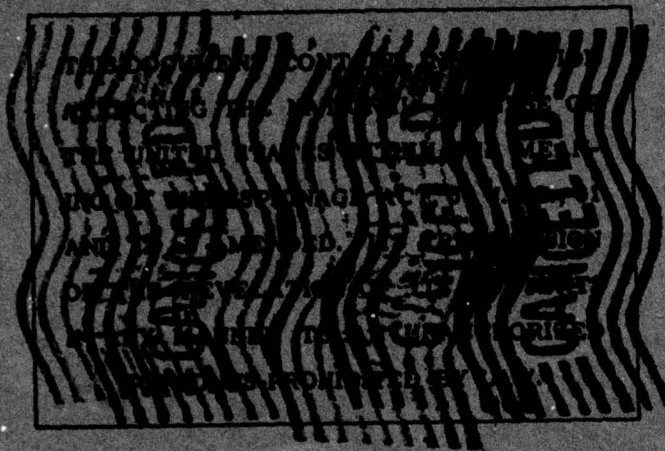
Change to **UNCLASSIFIED**
Dir of Sec. memo 8 April
1976

U.S.S. SARATOGA (CV-3)

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TECHNICAL REPORT BIKINI SCIENTIFIC RESURVEY



Report of
THE DIRECTOR OF SHIP MATERIAL
U.S.S. SARATOGA (CV-3)

Prepared for
The Project Officer
by the Technical Reports Section

Edited and Published by
Armed Forces Special Weapons Project
December 1947

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INDEX TO FIGURES

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<u>FIGURE</u>	<u>TITLE</u>	<u>PAGE</u>
1	Torpedo elevator on SARATOGA	10
2	Broken blister on SARATOGA	11
3	Damaged flight deck of SARATOGA	12
4	Port side starboard to port, of SARATOGA	13
5	Broken flight deck of SARATOGA	14
6	Unidentified view near center line of the SARATOGA	15
7	Damaged flight deck of SARATOGA	16
8	Damaged deck of SARATOGA	17
9	Aircraft elevator on SARATOGA	18

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SARATOGA (CV-3)

4.007 Ship Characteristics

Ship characteristics of Saratoga (CV-3) pertinent to this report, are as follows:

Length Between Perpendiculars-----850 ft.0 in.
Length Overall-----910 ft.1 3/4 in.
Draft Above Bottom of Keel (DWL)-27 ft.8 1/2 in.
Center of Rudder Stock Forward
of A. P.-----28 ft.0 in.
Centerline of Inboard Shaft
Strut from A. P.-----57 ft.8 in.
Centerline of Outboard Shaft
Strut from A. P.-----137 ft.8 in.
Bottom of Keel Below Base Line 0 ft.2 1/16 in.

SARATOGA: GENERAL DESCRIPTION OF DAMAGE

4.008 Target Condition at Time of Inspection

SARATOGA was found sunk in from 27 to 34 fathoms of water at Longitude 165° 30' E, Latitude 34° 50' N, heading 270° T. Apparently, flooding was general throughout the ship, and probably involves all compartments. Because of general warping and twisting of the hull girder, it is doubtful that any doors or closures are still watertight. The exact source of major initial flooding could not be determined, but from the analysis of damage in other parts of the ship, it is presumed that the bottom probably is seriously damaged, and that original flooding occurred between frames 60-70 and frames 130-140. There is slight evidence that the keel and bottom may be broken between frames 76 on the starboard side and 84 on the port side. If there is not a break in this section, the vessel was without doubt severely stressed. Further flooding was progressive and could have been through closures, wireways, and piping that probably received severe damage from initial shock and the final warping of the ship. Further flooding could have occurred through damaged or broken sea connections, but the small connections found and examined were in fair to good condition with sea valves apparently closed. Oil still continues to come to the surface from SARATOGA, but the exact points of seepage were not located.

Overall structural damage to SARATOGA was so great that it would have rendered the vessel useless tactically even though she had been kept afloat. In addition, SARATOGA probably is beyond repair.

The entire hull is warped, with the flight deck having a port slope of from 4° to 5° at the forward edge, and about 5° to 7° starboard slope aft of the elevator. In this area a slight dishing of the deck was noted. Farther aft the flight deck is so thoroughly dished and broken that no slope can be determined. At about frame 192 the shear strake on both sides is broken and the flight deck pushed down about 4 ft. in a rip all the way from port to starboard across the deck. Beneath the flight deck from about frame 111 to about frame 154 the main deck also is dished in. Broken piping and wiring, and buckled bulkheads and doors were noted in this area. Lockers and gear were thrown around and piled up in such a way that it is doubtful that any person present could have survived at the time of damage. The ship also appears to have been pushed in from both sides from the after edge of the elevator to the trailing edge of the flight deck.

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In addition to the transverse damage the ship appears to be warped longitudinally starting at the after edge of the elevator and with a gradually increasing upward slope forward; this slope reaches its maximum of from 4° to 5° at the forward edge of the flight deck.

The blister from about frame 94 to frame 130 is severely ruptured and pushed in along the side of the hull. In way of manholes and bulkheads, however, the indentation is not so great. This damage extends down for about 15 to 30 ft.

The keel of the vessel is above the lagoon bottom from about frame 48 forward. From the stem back to about frame 10 the bottom, keel, and side shell appear to be in good condition. Starting at frame 10, however, and going aft, the garboard and B strakes port and starboard are dished, this being more pronounced farther aft. The deepest indentation was found where the keel enters the lagoon bottom. Here the No. 1 and 2 longitudinals are bent in but make a visible impression in the shell. Between these and the No. 3 longitudinal bulkhead are three small arcs in a major arc between the keel and No. 3 longitudinal bulkhead. In this area transverse framing has been pushed in with the plating to such an extent that none is visible. The maximum extent of indentation is from 6 in. to 12 in. Rivets in this area of indentation were found to be stressed and cocked over, but none was found that had failed.

At about frame 25 on the starboard side between the waterline and a point about halfway up from the bottom, a heavy indentation was reported by two divers.

At about frame 76-77 a crack was found in the blister. This is about 4 to 6 in. wide at the maximum, and tapers to about 1 in. in width at the top. It goes around the turn of the bilge and then heads at a 45° angle aft toward the keel. This crack is in clear plating and not at a seam. On the opposite side of the hull vertical paint cracks were found at about frame 84-86. It is interesting to note that this break in the blister is roughly where the upward curvature forward on the flight deck begins. Slightly aft of this crack, sighting along a longitudinally welded seam, slight sagging curvature can be seen, which correlates with the warping previously described.

Throughout the forward section, except as otherwise noted, there is a general dishing of plating between transverse and longitudinal frames. This does not appear to be serious.

The blister at the bottom amidships is in surprisingly good condition, showing no effects of the blast. The turn of the bilge is in the sand and cannot be observed. The crushed top of the blister is in evidence to a depth of between 15 ft. and 30 ft. from the blister top. Slight dishing of plating was noted between frames in the midship section of the blister.

The rudder and after end of the ship were reported to be in good condition with the exception of No. 1 and No. 3 shafts, stern tubes, and struts. No. 1 and No. 3 stern tubes are ruptured; No. 1 along the side with the crack tapering in two places into the hull, and No. 3 along the top. No. 1 strut is broken at the barrel, and about 6 in. from the hull, and the one propeller blade which is visible is also broken. No. 3 strut is broken at the hull and about 12 in. from the barrel. Both shafts appear to be well out of line and possibly bent or broken. The hull is ripped open several inches where the upper palm of No. 3 strut was secured.

Damage to the superstructure of SARATOGA is extensive. The stack is broken off at the 04 level and lies across the deck, with the top being within about 20 to 25 ft. of the port side. The deck houses are buckled and doors rendered inoperable as a result. Gun shields and mounts appear to be in from good to poor

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condition, but a definite evaluation of damage cannot be made without training and elevating the guns. Test gear was found to have incurred varying degrees of damage, but in general was pretty well scattered about the deck. Radar and radio gear, and fire-control antennae were completely destroyed. Searchlights were knocked from their platforms and rendered inoperable. Numerous electric cables, as well as piping and ventilation, were found to be broken.

The aircraft elevator platform, shaft, and operating gear were destroyed.

4.009 Forces Evidenced and Effects Noted

The two major effects of the bomb noted were represented by damage due to shock and to pressure forces. These effects were sufficiently extensive to sink the vessel and render it completely inoperable.

The snapping of the struts on No. 1 and No. 3 shafts, along with miscellaneous other evidences such as waterway covers being bounced out of waterways, the knocking of an army test vehicle out of its chocks and securing cables leaving nothing but four very large and clear tire imprints where the vehicle had stood, all show evidence that the vessel suffered severe shock. In addition, lockers and gear in compartments inspected were ripped from their fittings and strewn about the interior of the ship.

The smashing of the flight deck aft, and the buckling of the garboard and B strakes show that the vessel was subjected to very high pressures. There is evidence, from some doors in the same compartment being dished in and others out, that in addition to high positive pressure, negative pressure also caused damage.

The warping of the hull girder and the knocking over of the stack could have been caused by either pressure, or shock, or both.

There were no other effects peculiar to the bomb except as noted in the preceding paragraphs. No evidences of excessive heat, fires, or explosions were observed.

4.010 Effects of Damage

A. The effects of the damage incurred probably would have put the vessel dead in the water immediately. It is doubtful if any machinery could have remained in operable alignment, or that switchboards and electrical equipment could have withstood the shock. Communications, except by isolated sound-power phones, would have been destroyed, and ship control would have been lost completely.

B. Radar masts and antennae were destroyed, and directions examined appeared to be in from fair to bad condition. It is difficult to estimate the damage to this equipment, but it is highly improbable that any fire-control system could have been used effectively subsequent to damage.

C. The effect of the bomb on watertight integrity was disastrous, and the ship apparently sank because of progressive flooding. SARATOGA had good positive stability throughout, and is at present resting on the bottom almost on an even keel.

D. Personnel would have suffered heavy casualties from the shock alone, and it is doubtful that more than a very small percentage of the complement could have survived. Those who survived the shock probably would have been victims of high-intensity radiation.

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E. The total effect on the efficiency of the ship was to render it useless for fighting or any other activity. SARATOGA would have been a complete loss even if she had remained afloat.

4.001 General Summary of Observer's Impressions and Conclusions

The forces exerted on SARATOGA were considerably greater than anything she or any other ship was ever designed to withstand. The structure of the ship failed in numerous ways, due both to very high pressure and to severe shock. To withstand such a blast at the distance SARATOGA was located from the target center, a ship would have to be much larger, and scantlings and plating would have to be considerably heavier than anything now used in heavy ship construction.

It is believed that if it is ever considered to be practicable, sufficient information has been obtained to design and build a ship that could withstand the forces to which SARATOGA was subjected.

4.012 Preliminary Recommendations

It is considered that all the information concerning SARATOGA that can be derived from diving operations has been obtained. Considerably more information could no doubt be acquired if the hulk ever were raised, but it is believed that such an operation would hardly be worth the requisite time and money under the circumstances.

SARATOGA: DETAILED DESCRIPTION OF DAMAGE

4.013 Foreword

The overall condition of SARATOGA is bad. There was general failure of structural members and plating throughout the ship, with the major known damage occurring to the after part of the flight deck, and the major suspected damage being to the bottom shell and keel in the midship half length.

The most general area of major damage involved a warping of the hull girder throughout its length. In addition, the garboard and B strakes port and starboard are buckled in from frame 10 as far aft as could be seen. The flight deck and bulkheads, beams, frames, and decking beneath it are severely ruptured, and/or bent, or buckled. The starboard blister amidships also is destroyed to a depth of 15 to 30 ft. below the blister top.

Flooding was general throughout the ship and it is doubtful if there were any dry compartments at the time of the resurvey.

4.014 Superstructure

Damage to the superstructure was found to vary widely from practically negligible items to complete destruction. Major damage was done to the stack, which was destroyed; it was broken off at the O4 level, and lay across the deck to port within about 20-25 ft. of the edge of the deck. The failure at the base was riveting; either the rivets sheared or they pulled through the plating. Because of the amount of wreckage about the uptakes and the base of the stack, a closer examination was not practical. In addition to being knocked over, the stack was crushed, buckled, and torn throughout its length. The uptakes going down into the hull appeared in from fair to good condition.

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Doors in general were dished in and out throughout the superstructure on the port and starboard sides. Failure was found either at the door itself, or both the door and door frame. Doors were rendered either completely inoperable or very difficult to operate. The double door to the gear locker at frame 75 was destroyed. The inner or after door was completely pushed in, while the forward door was heavily buckled. The door frame and plating around it were also warped.

The lower forward superstructure was in better condition than any other section thereof. Other than door damage as described above, there was a slight dishing of the house side along the starboard side. The after part of the forward superstructure was dished somewhat more.

Up around the navigating bridge and other upper levels of the superstructure much heavier damage was noted. It consisted principally of heavy warping and breaking of steel decking and house sides, to such an extent that this part of the vessel was rendered untenable. Railings, parts of decking, and plating in this area were missing and are presumed to have fallen to the bottom of the lagoon. The catwalk from the forward superstructure to the stack is still in its original position, but is badly twisted and torn, and is not in usable condition.

The after superstructure was damaged considerably more than the forward section. It was severely buckled throughout, and rendered completely untenable.

Searchlights were knocked from their platforms, and two 24-inch lights are destroyed and lying on the flight deck.

4.015 Guns, Gun Mounts, and Directors

Very little accurate information could be obtained about guns, mounts or directors other than by general visual observation. In most cases 5-inch and 40mm. installations appeared in from fair to good condition. Forty millimeter mounts on the starboard side amidships appeared to be somewhat warped, both from the direct forces of the blast and from being struck by debris from the superstructure or test equipment. Forty millimeter directors appeared in general to be in fair condition.

The starboard side of 5"/38 cal twin mount shield No. 5 appeared to have a slight dish. Although this indentation was not serious enough to damage the mount, nothing definite about its operability can be established, since it could neither be trained nor elevated.

Little could be ascertained about the 20 mm. guns, but some appeared to have slightly bent barrels.

All radar fire-control gear was destroyed, and it is believed that all 5-inch directors also were rendered inoperable.

4.016 Weather Deck

The weather deck (in this case the flight deck) was destroyed. In addition to the stack lying across the deck, which in itself would have precluded any flight operations, the deck aft of the stack was severely indented to a depth of about 12 to 15 ft. and exhibited a large quantity of broken planking. Forward of the stack, the aircraft elevator was demolished, and the deck dished and slightly warped. The latter condition probably would have made flight operations impracticable.

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4.017 Exterior Hull above Waterline

The exterior hull above the waterline could be examined only from the gun gallery to the flight deck, except for the fact that divers were able to see sections of the ship on their way down the descending line to the lagoon bottom. The most serious damage occurred about frame 192 port and starboard, where there was about a four-foot step in the flight deck. On each side the plating between the gallery deck and the flight deck was ruptured, and the actual shell plating fore-and-aft of this section was buckled. The sheer strake below the main deck on both sides was reported to be cracked.

The other major damage to the shell was found fore-and-aft in way of the forward accommodation ladder to the blister. Here the shell was slightly buckled, with the heaviest damage occurring just below the flight deck and diminishing in intensity down the side of the ship. This buckling occurs in the same area that the upward bend in the flight deck forward begins, and slightly aft of the cracked starboard frame 76-77, and the paint cracks on the port side. Immediately below this section is where a permanent sag was found in a longitudinal weld in the blister. All of this data indicated that serious damage probably occurred in the bottom and keel of the hulk where it cannot be inspected.

Other than the above damage the exterior hull above the waterline appeared to be in very good condition.

4.018 Compartments above the Waterline

Since all doors were warped, access to compartments was very difficult. A few compartments between frames 111 and 160 were entered, either through flight-deck holes or doors that eventually were pried open on the gallery deck. In each compartment wreckage was very extensive. Failure of structural material included bending and warping of transverse main girders and bulkheads. It was interesting to note that in most cases brackets where frames and beams met proved strong enough to withstand the forces exerted, and that the failure occurred in the stiffening member itself.

In general, piping, wiring, and ventilation were destroyed. Lockers, fittings and equipment in all the compartments inspected were ripped from their installed positions and strewn and piled about, making passage very difficult if not hazardous.

Although no compartments were entered below the main deck, it is presumed that damage to these was similar, but probably not as extensive as in compartments below the flight deck. The main deck was so covered with debris that the exact amount of damage inflicted could not be determined. It was, however, heavily indented--almost to the extent of the flight deck. None of the closures in the main deck was found to be operable.

All compartments were presumed to be completely flooded.

4.019 Compartments Below the Waterline

Compartments below the waterline were not examined in the course of this operation, but are all presumed to be flooded.

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4.020 The Underwater Hull

The hull rests on and in the bottom of the lagoon from about frame 48-49 aft. Forward of this point the keel rises gradually up from the lagoon bottom on a slope to the stem, where it is about 8 ft. off the bottom. The underwater hull appears to be in generally good condition with few exceptions. The entire hull port and starboard was very thoroughly inspected, but sufficient damage to cause sinking was not found either in way of the visible part of the bottom or in way of the sides.

The major damage found in the underwater hull was forward between frames 10 and 48-49, where the keel begins to rest on the bottom. In this area both garboard and B strakes port and starboard are indented longitudinally, to an increasing extent as they approach frame 48. The indentation to starboard is heavier than to port. At the point of maximum indentation the strakes are slightly indented between longitudinals 1 and 2, and in an overall arc from 6 to 12 in. deep between the keel and No. 3 longitudinal bulkhead. In this area rivets were reported to be cocked over but still holding. It therefore seems probable that a certain amount of minor leakage could have occurred in this area.

A large dent was reported by divers in the underwater hull between frames 25 and 30, from about the waterline down to a place about half the distance from the waterline to the bottom. A mild dishing of plating on the starboard side between longitudinal and transverse frames was reported, but was considered to be of a very minor nature.

On the port side at about frame 40, a sea strainer about 18 in. by 12 in. was found with minor damage to its edges that could have caused slow leakage. The strainer was removed and the chest examined. No internal damage was found, and it is believed the sea valve was secured. The chest apparently held air by collecting bubbles from the divers to such an extent as to support combustion in the chest while burning was being done.

At about frame 76-77 a large crack was found in the blister on the starboard side. This crack extended up as far as the divers could see and appeared to be about one inch wide at the top. It widens as it comes down to a maximum of from four to six inches just above the turn of the bilge. It then narrows down again, goes around the bilge, and heads under the hull at an angle of about 45° towards the keel. After it starts under the bottom the plates overlap. On the port side (roughly in this area) at about frame 84, several vertical paint cracks were found. This fact indicates that more severe damage to the bottom may have been incurred aft of this area. In addition to the crack, a longitudinal weld in the blister at about frame 90 was closely examined, and found to have a small sag as divers sighted along it.

The remaining damage found in the underwater hull was around the starboard quarter in way of stern tubes and struts. Both starboard upper strut arms apparently were broken in two places each, near the barrel and near the shell. The lower arms are now buried in the bottom. Number 1 upper strut arm snapped at the barrel and about 6 in. from the hull. Number 3 upper strut arm was broken at the hull where it ripped the plating open several inches, and at about 12 in. from the barrel. The two starboard stern tubes were cracked. Number 1 was split along the outboard side from the outer edge of the bearing to a point almost up to the hull, where the crack divided into two thin cracks up to the skin of the vessel. Number 3 strut was cracked on top from the after end to the hull. Both No. 1 and No. 3 shafts appeared to be well out of alignment.

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These three cracks, the one at No. 3 upper palm girder, and two in the stern tubes, could have caused minor leakage. The rudder pintles, and gudgeons all appeared to be in good condition, as did the port and starboard snell in this area.

Throughout the inspection no holes or cracks, in the underwater hull were found that were large enough to cause sinking. It is therefore presumed, in view of the evidences found elsewhere consisting of warping, cracks, and ruptures, that the bottom of the vessel amidships had been heavily damaged.

4.021 Tanks

No tanks were inspected in the course of the resurvey, with the exception of those in the starboard blister, which were severely buckled, torn, crushed, and pushed down from about frame 100 to about frame 130. This damage extended to a depth of between 15 ft. and 30 ft. below the top of the blister. No additional damage could be found at the bottom sections of the blister tanks, except for a minor dishing of plating between longitudinal and transverse frames. The crack and warped weld described in Section 4.020 are the only other evidences of damage found in way of the blister tanks. Oil was found rising to the surface in varying quantities, but places of leakage could not be located.

4.022 Flooding

Considering the general extent of damage, it is doubtful that any watertight integrity remained, and it is presumed that the hull was flooded throughout.

4.023 Ventilation

Where inspected, ventilation installations in the superstructure and below the flight deck were destroyed. In other locations installations were not accessible, but were presumed to be in from poor to bad condition.

4.024 Ship Control

The bridge area was severely damaged, and because of this and the amount of damage done to wiring and electrical equipment found, it is believed that ship control from any station was lost immediately following damage.

4.025 Fire Control

All radar was destroyed, and it is doubtful that any fire control other than local would have been operable.

4.026 Ammunition

All of the ammunition placed on and around the flight deck appeared not to have reacted in any way. There is no indication that any ammunition was detonated.

4.027 Ammunition Handling Gear

The bomb and torpedo elevators apparently were rendered inoperable. No other ammunition-handling equipment was observed, but it is doubtful that it could have been operated satisfactorily if at all.

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4.028 Overall Strength

The overall strength of the ship was severely impaired by the destruction of the flight and main decks and the probable damage to the bottom amidships.

4.029 Miscellaneous

Radioactivity had decreased considerably in the course of a year. Gear and other materials brought up from SARATOGA were tested and found to vary considerably in radioactive contamination. Marine life showed the greatest concentration of fission products. Wood, manila line, fire hoses and foamite also exhibited relatively high concentrations. Maximum readings obtained on marine life with a No. 263 radiation meter were .05 r/24 hr (gamma) and .90 r/24 hr (beta-gamma).

4.030 Welding and Riveting

Welding and riveting appeared to have held in heavy plating wherever it was inspected; cracks found were in clear metal. In light plating around the superstructure, however, riveting failure was predominant.

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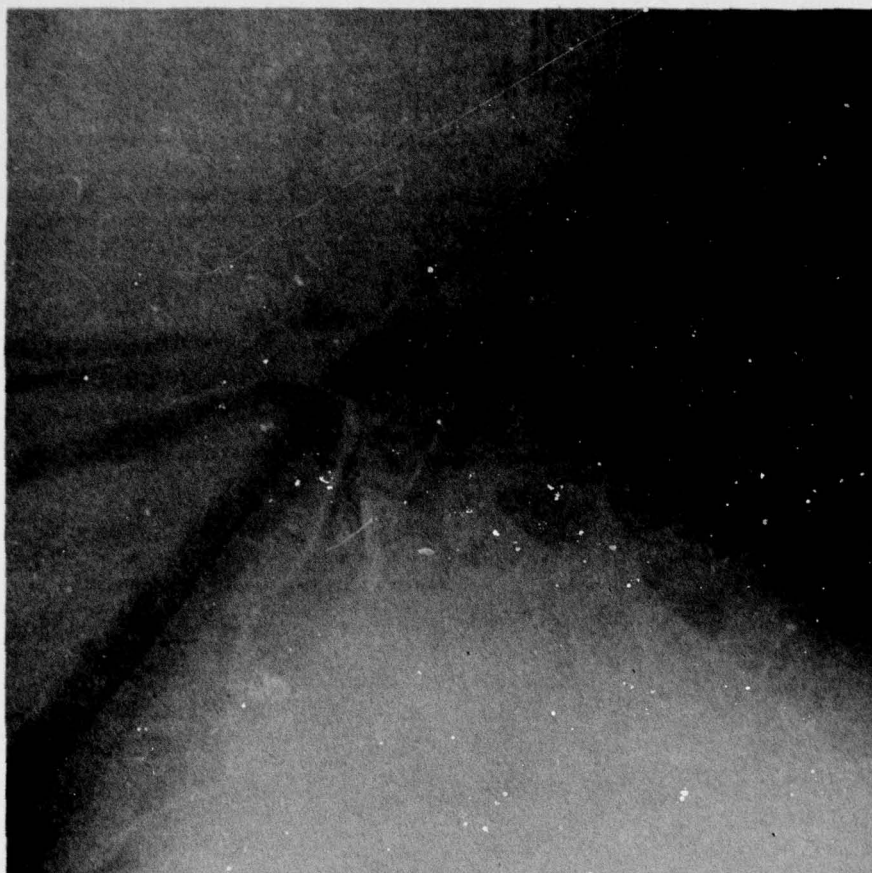


Figure 1. SARATOGA. Torpedo elevator hatch, frames No. 126 to No. 130 looking forward. ABCR Photo No. 6017-6.

- 10 -

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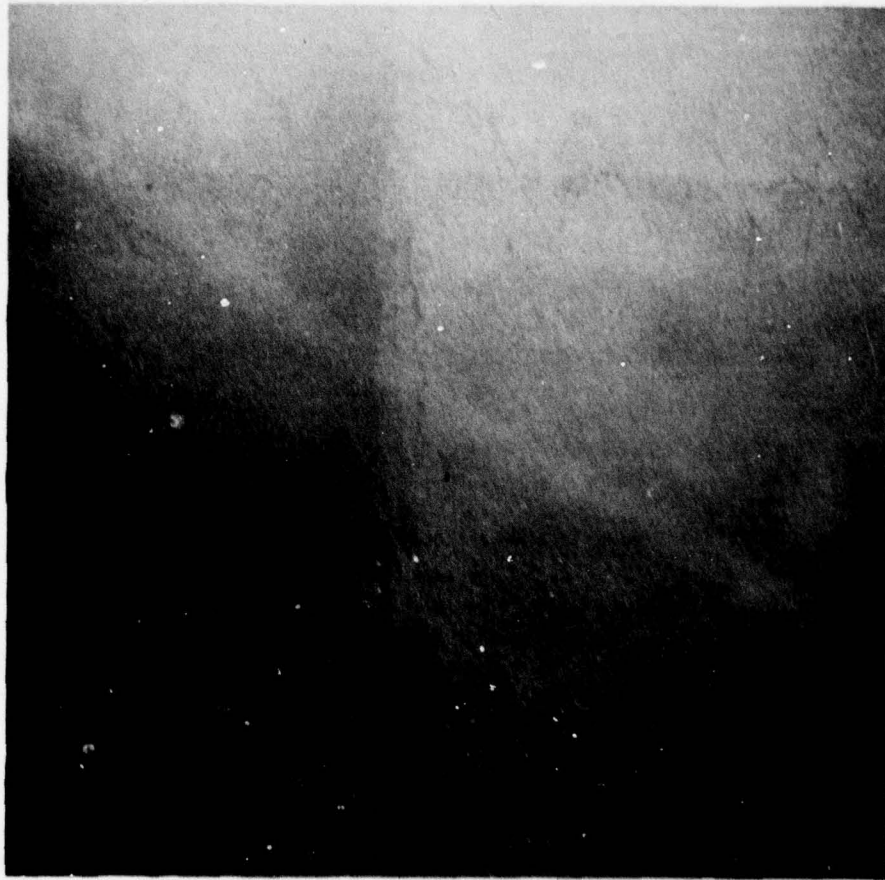


Figure 2. SARATOGA. Broken blister looking forward, about frame No. 120. ABCR Photo No. 6022-4.

- 11 -

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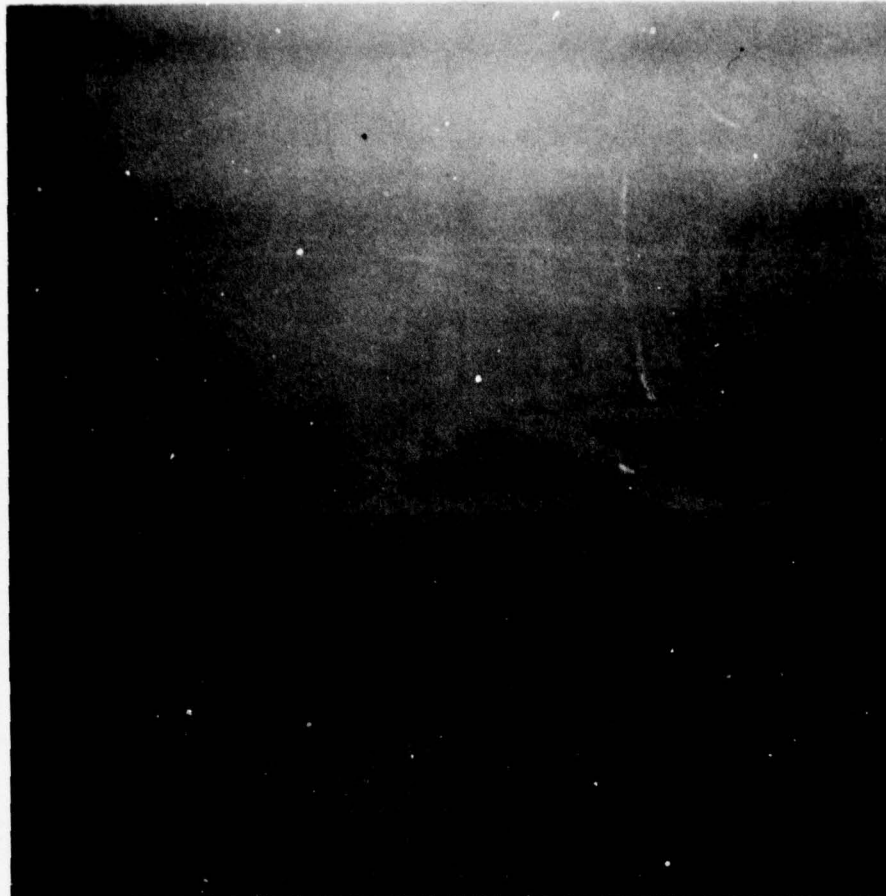


Figure 3. SARATOGA. Damaged flight deck, port side, about frame No. 157. ABCR Photo No. 6025-14.

- 12 -

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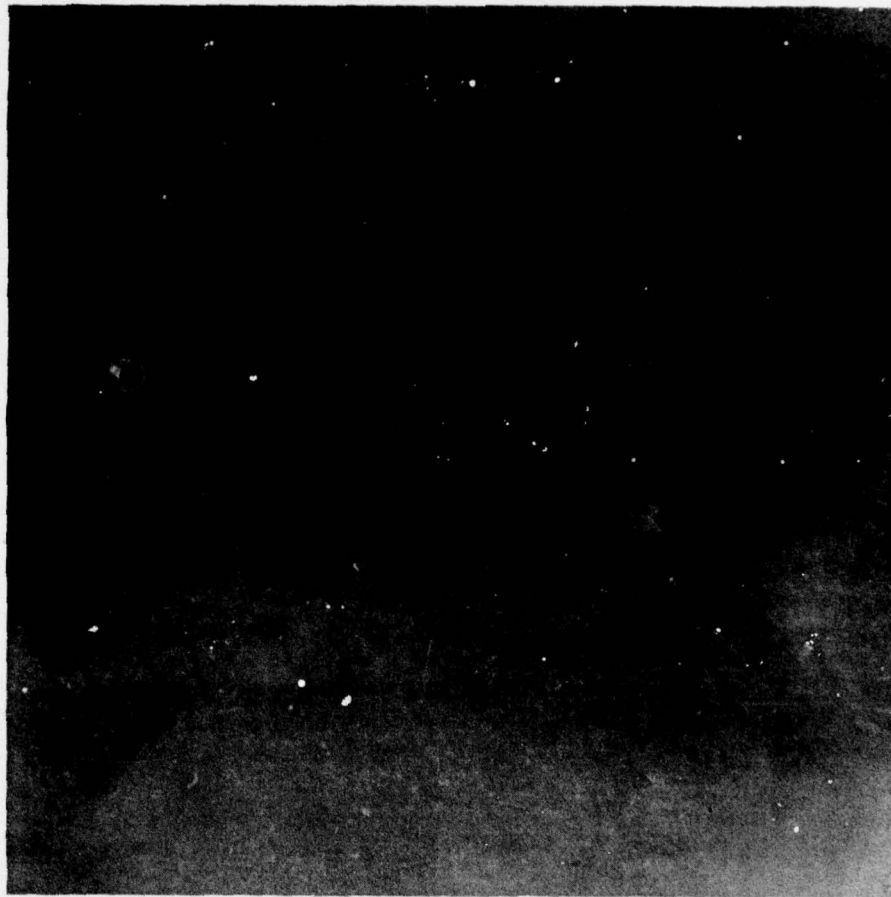


Figure 4. SARATOGA. Port side, starboard to port, deck break at frame No. 195. Note drop along deck edge indicating ruptured sheer strake. ABCR Photo No. 6026-10.

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Figure 5. SARATOGA. Broken flight deck, port side looking forward, about frame No. 126. ABCR Photo No. 6030-2.

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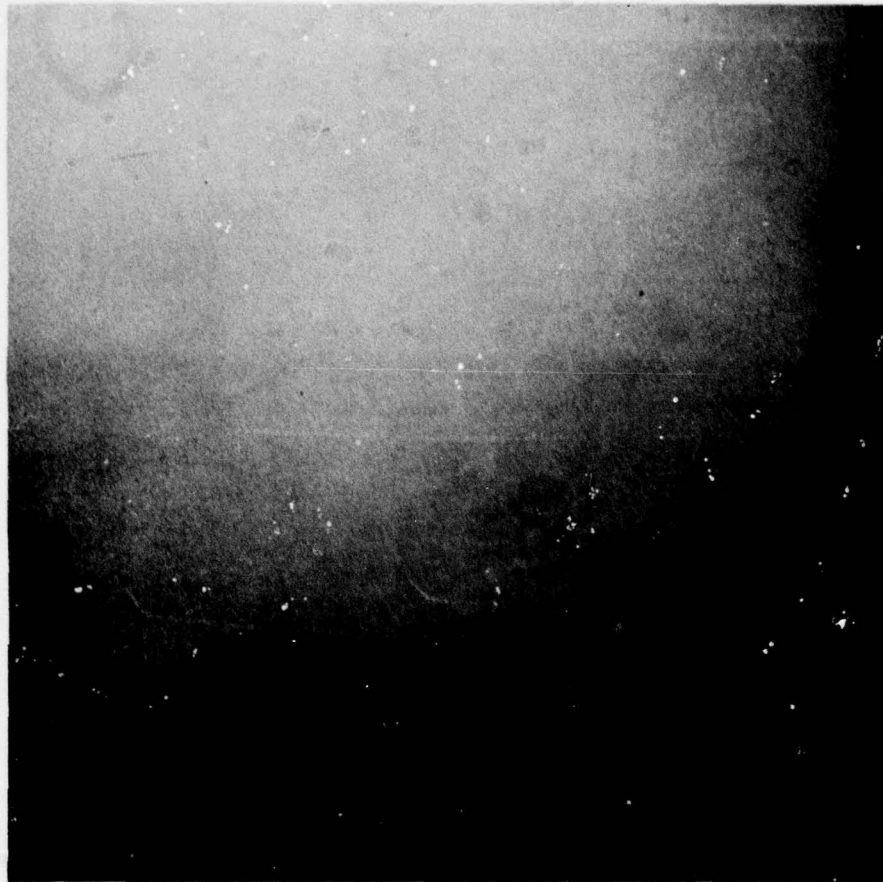


Figure 6. SARATOGA. Unidentified view near centerline, somewhere between frames No. 134 and No. 150. ABCR Photo No. 6030-12.

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Figure 7. SARATOGA. Damaged flight deck, port side, about frame No. 157. ABCR Photo No. 6030-14.

- 16 -
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Figure 8. SARATOGA. Damaged deck about frame No. 162 near centerline. ABCR Photo No. 6030-15.

- 17 -

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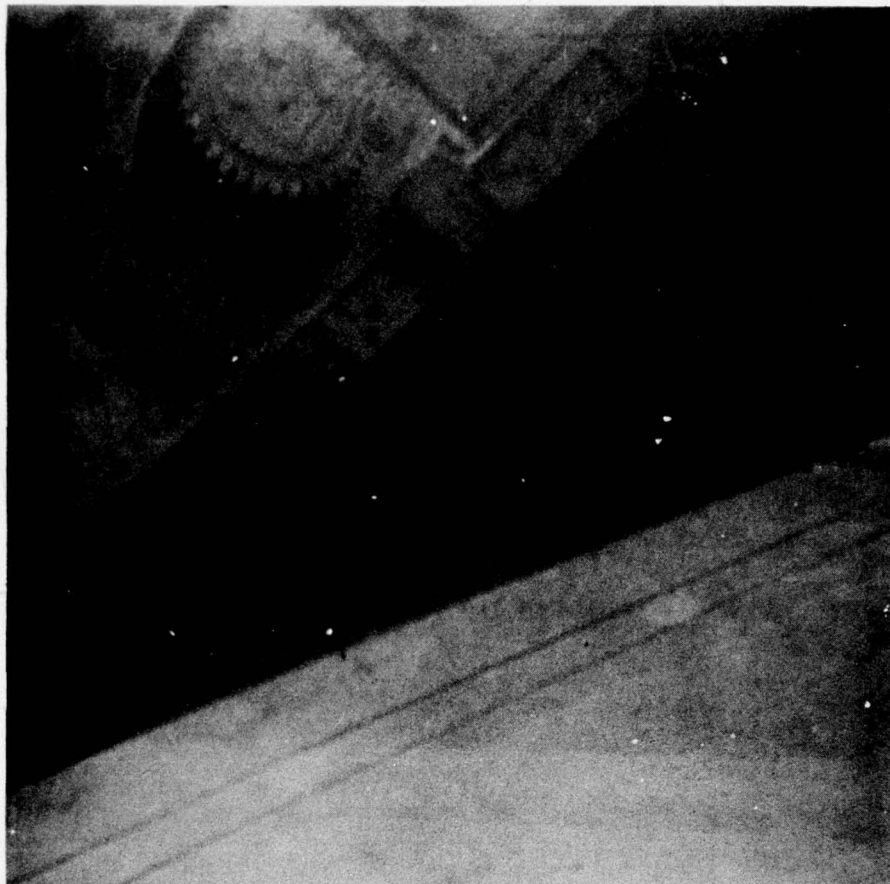


Figure 9. SARATOGA. Aircraft elevator, port after edge looking to starboard. ABCR Photo No. 6005-13.

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ANNEXES : SARATOGA

A: Drawings Showing Damaged Areas

B: Photographs

C: Divers' Reports

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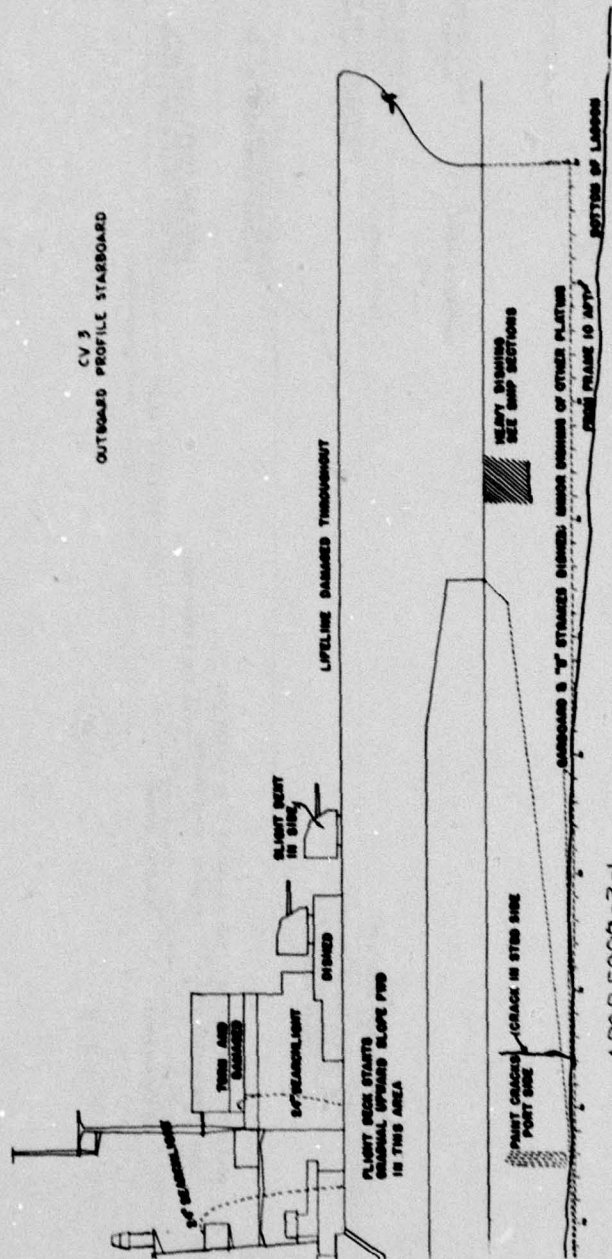
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ANNEX A : SARATOGA

Drawings Showing Location of Damage

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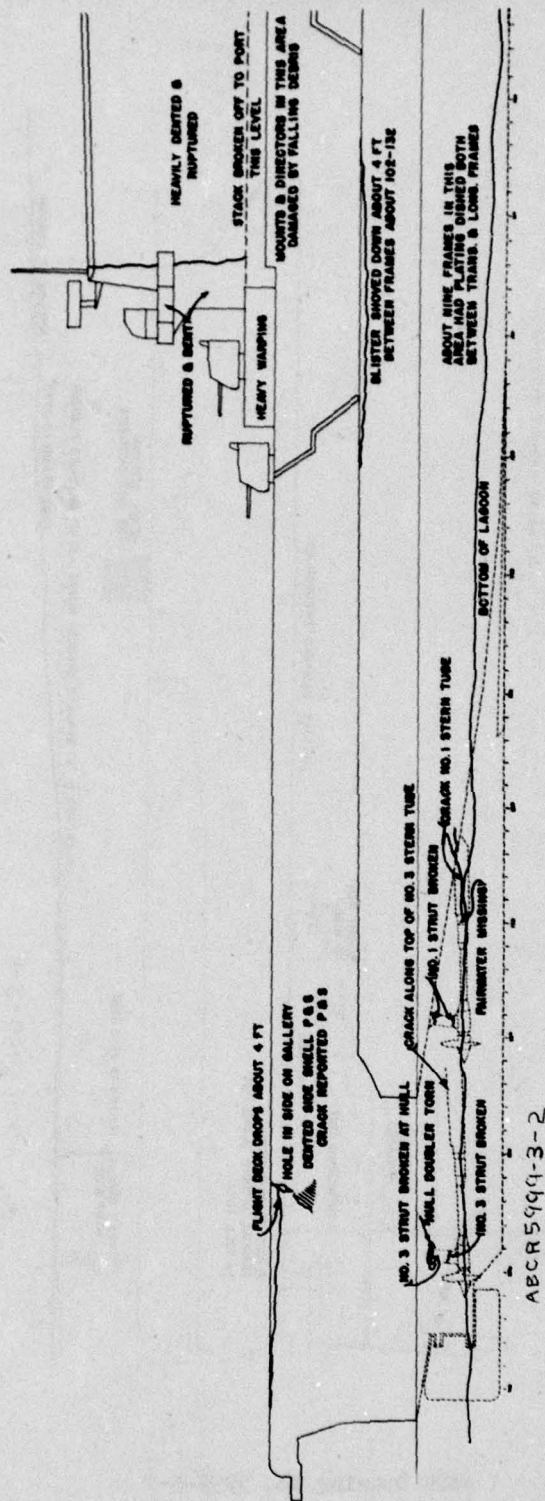
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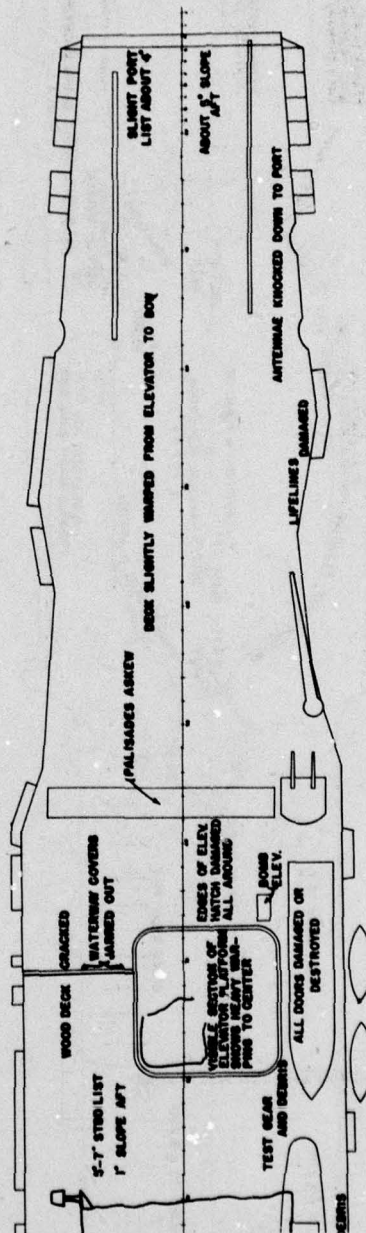
ABCR 5999-3-2

ABCR Drawing No. 5999-3-2

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CV 3
FLIGHT DECK

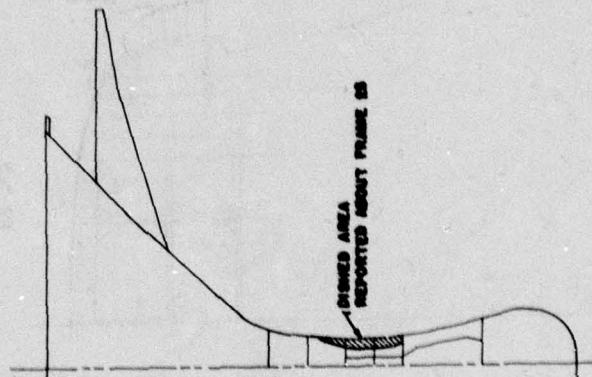


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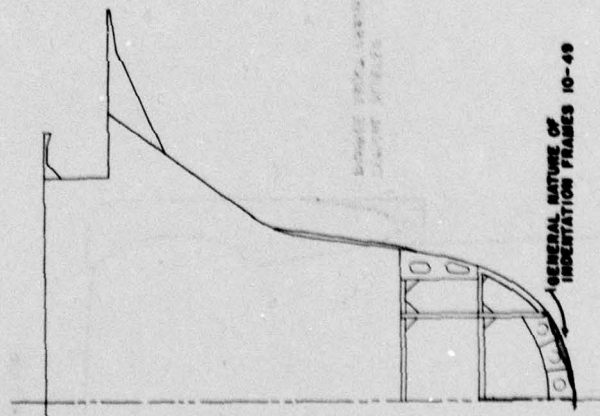
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FR * 8



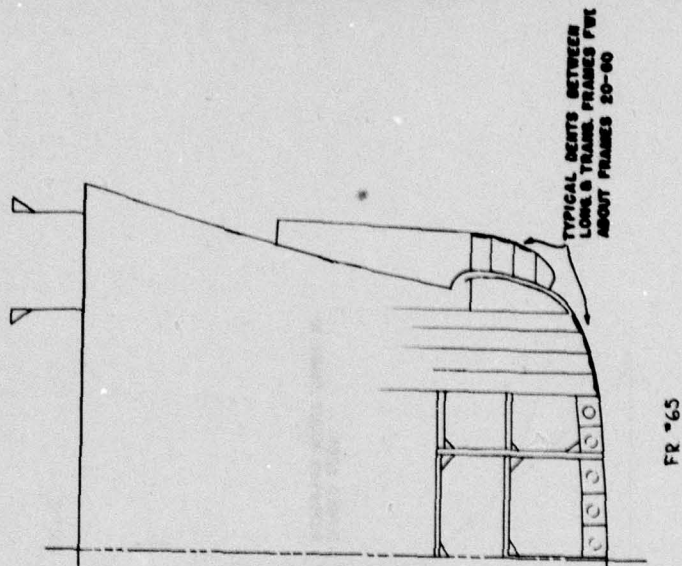
FR * 38

ABCR 5999-5

ABCR Drawing No. 5999-5

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TYPICAL BLISTER
DAMAGE ABOUT FRAME 120

FR #106

ABCR 5999-4

FR #65

TYPICAL BENTS BETWEEN
LONG & TRANS. FRAMES FOR
ABOUT FRAMES 20-60

ABCR Drawing No. 5999-4

- 24 -

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ANNEX B : SARATOGA

Photographs

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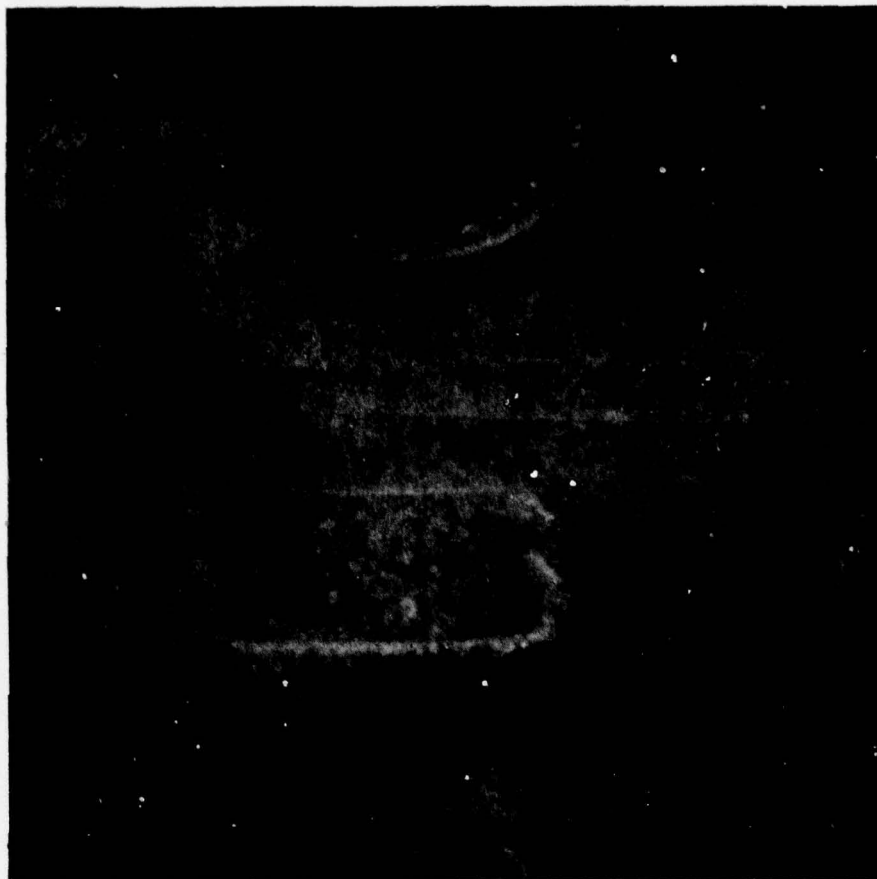
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Deck House, Port Side, Flight Deck, showing warped door and Ship's Service air fittings, frames 61-62. ABCR Photo No. 6002-2.

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UNCLASSIFIED [REDACTED]



Grabs and Access to #5 - 5" 38 cal. dual mount. ABCR Photo
No. 6002-4.

- 26 -

[REDACTED]
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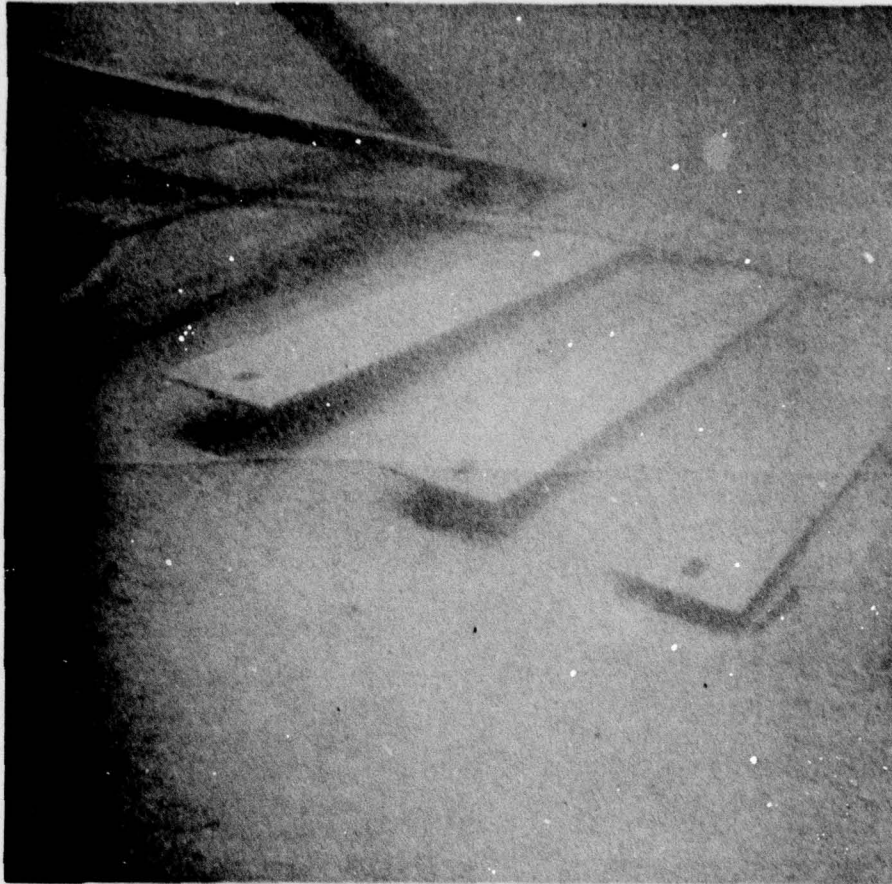
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Crane Mechanism and Debris on Flight Deck, Starboard Side Forward of Deck House. ABCR Photo No. 6002-5.

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Pallisades showing distorted and raised pallisades. ABCR
Photo No. 6002-6.

UNCLASSIFIED

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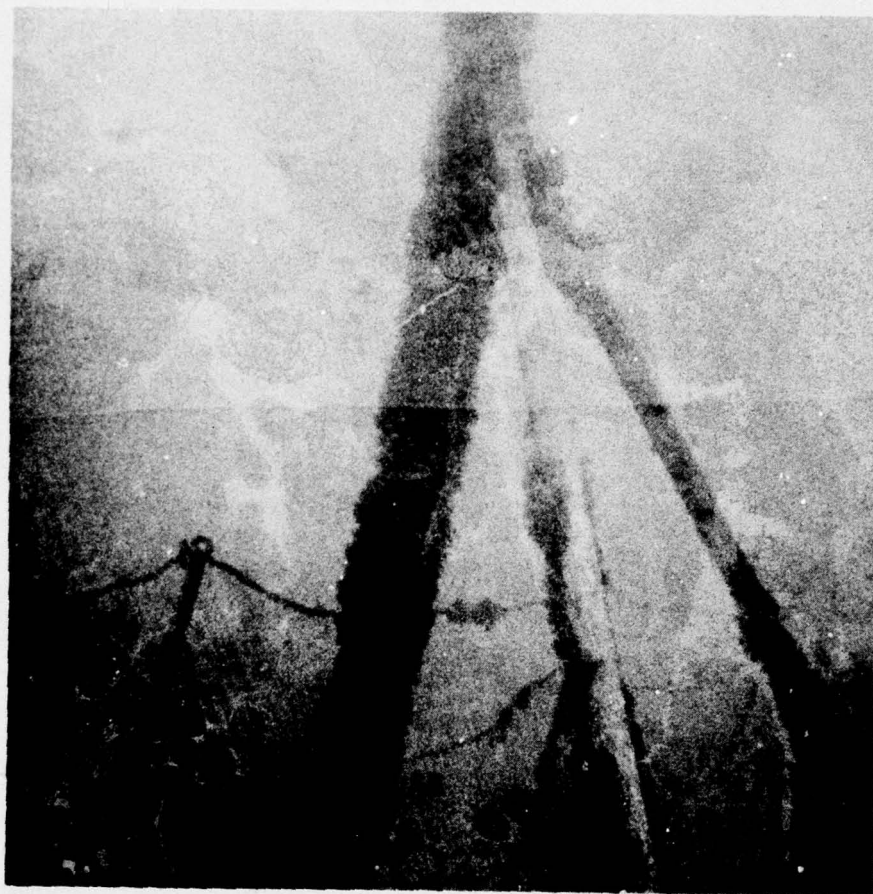


Pallisades, showing distorted and raised pallisades. ABCR
Photo No. 6002-7.

- 29 -

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UNCLASSIFIED [REDACTED]



Jackstaff and forward lifeline damage. ABCR Photo No. 6002-8.

[REDACTED]
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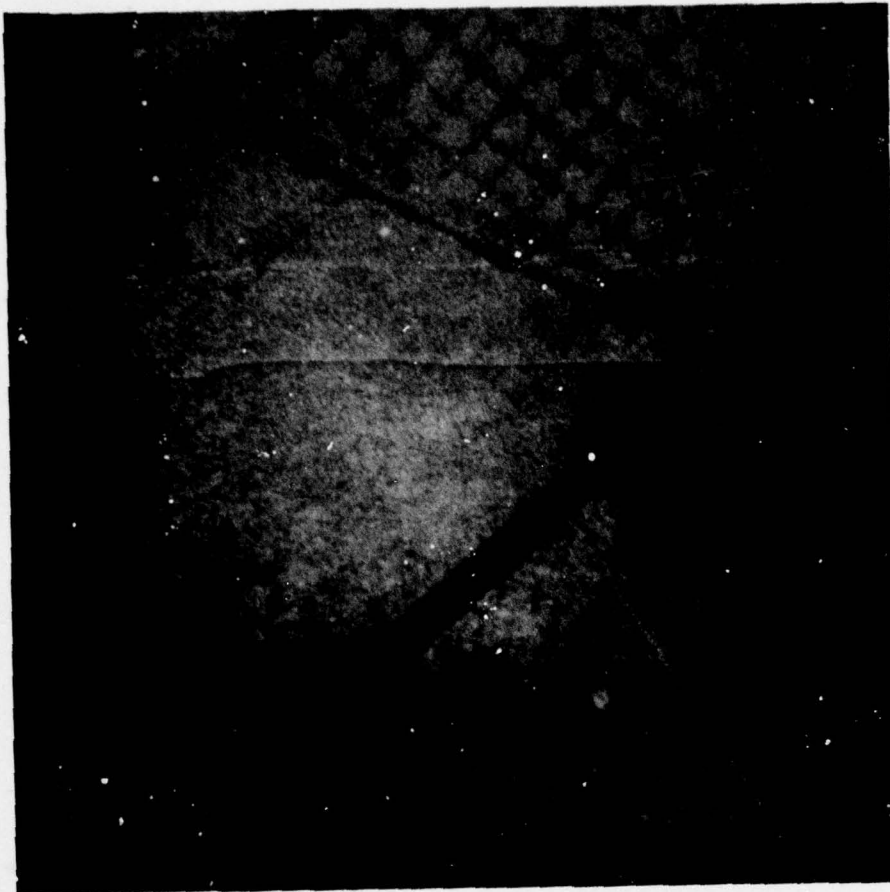
~~TOP SECRET~~ UNCLASSIFIED



Stanchions on forward flight deck. ABCR Photo No. 6002-9.

~~TOP SECRET~~ UNCLASSIFIED

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Airplane crash net on starboard bow. ABCR Photo No. 6002-10.

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Flush hatch on forward flight deck between frames 31 and 32.
ABCR Photo No. 6002-11.

- 33 -

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UNCLASSIFIED [REDACTED]

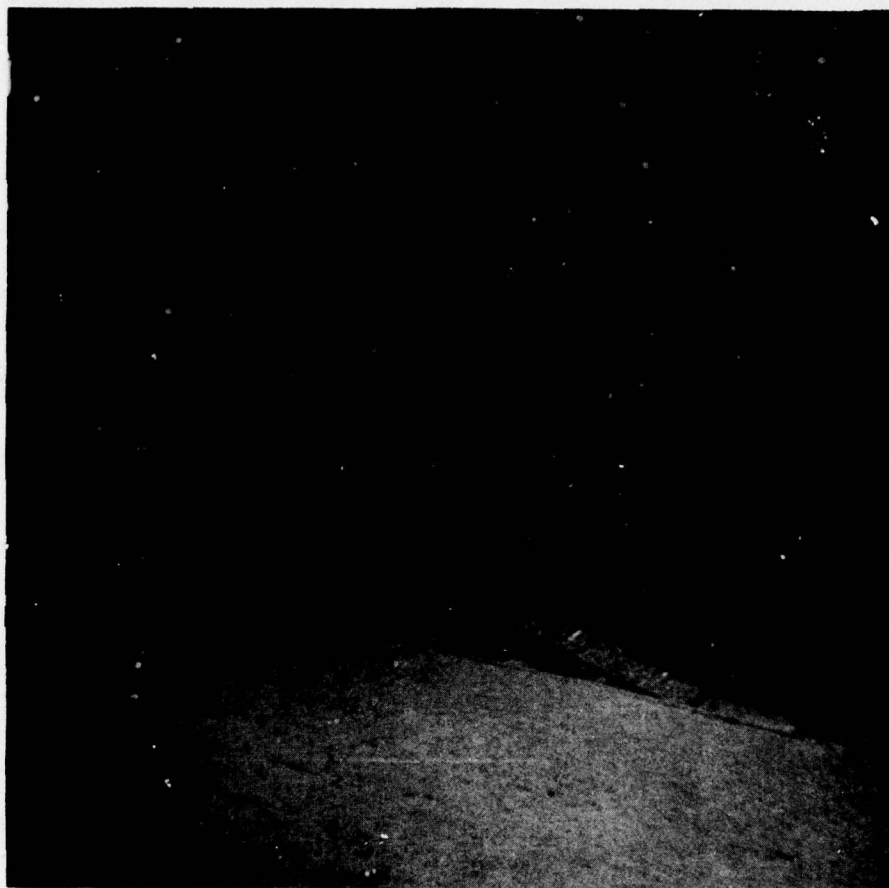


Radio Antenna starboard forward bow bent inboard. ABCR Photo
No. 6002-12.

- 34 -

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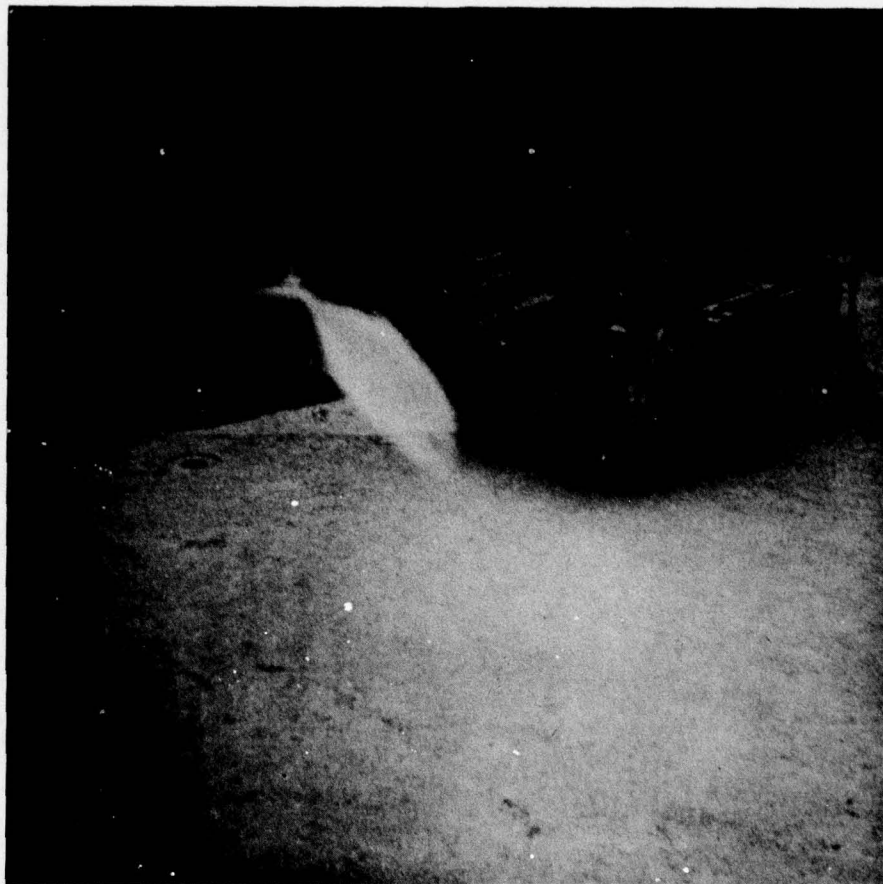
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Bomb elevator-note dished door in superstructure, port forward side of deck house behind elevator. ABCR Photo No. 6002-14.

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Bomb elevator and dolly, flight deck, at forward deck house.
ABCR Photo No. 6002-15.

- 36 -

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Pallisades and flight deck. ABCR Photo No. 6002-19.

- 37 -

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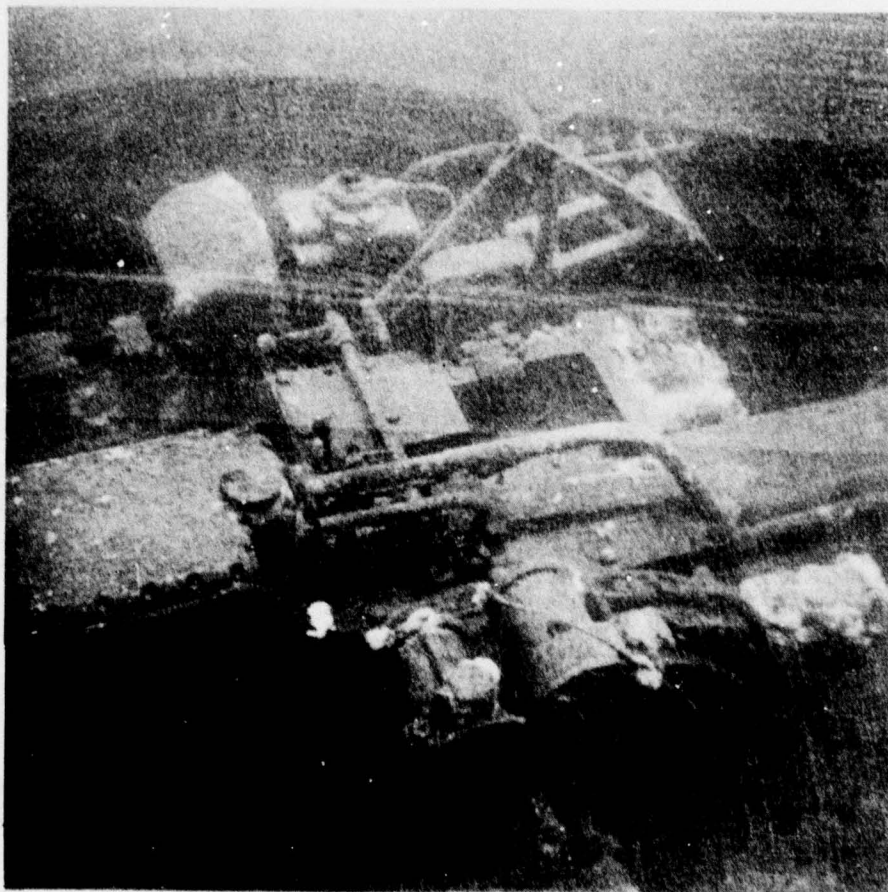
UNCLASSIFIED [REDACTED]



Pallisades and flight deck. ABCR Photo No. 6002-20.

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5" 38 Cal. single mount #3 on forward starboard gallery. ABCR
Photo No. 6002-21.

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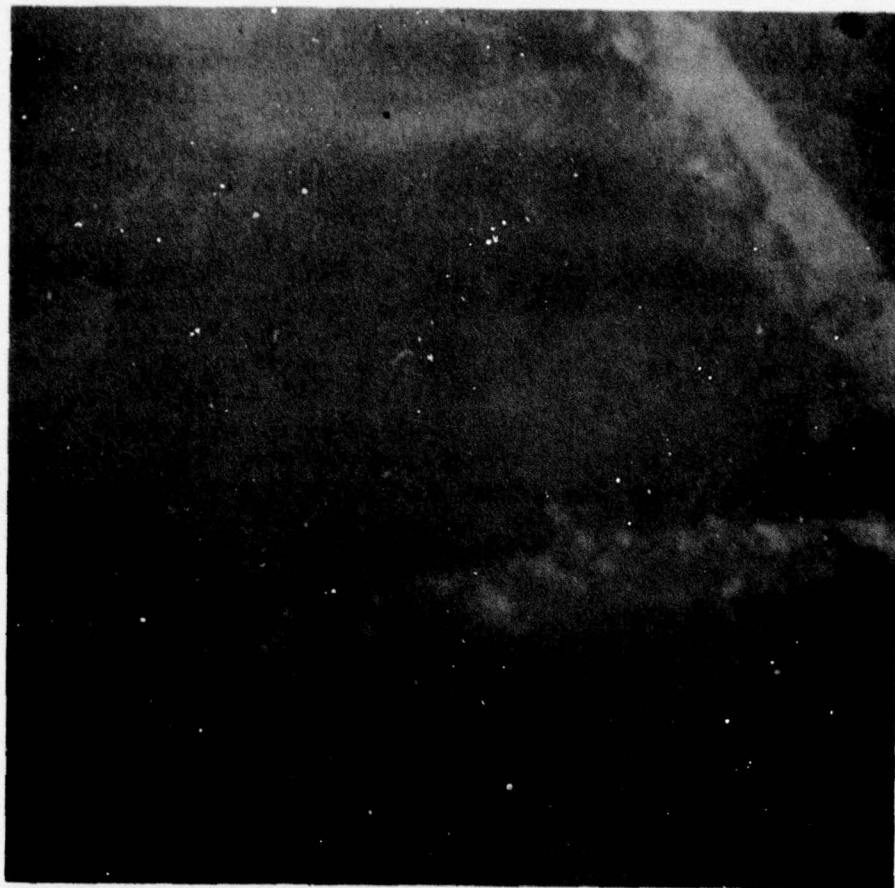
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5" 38 Cal. single mount #3 on forward starboard gallery. ABCR
Photo No. 6002-22. END.

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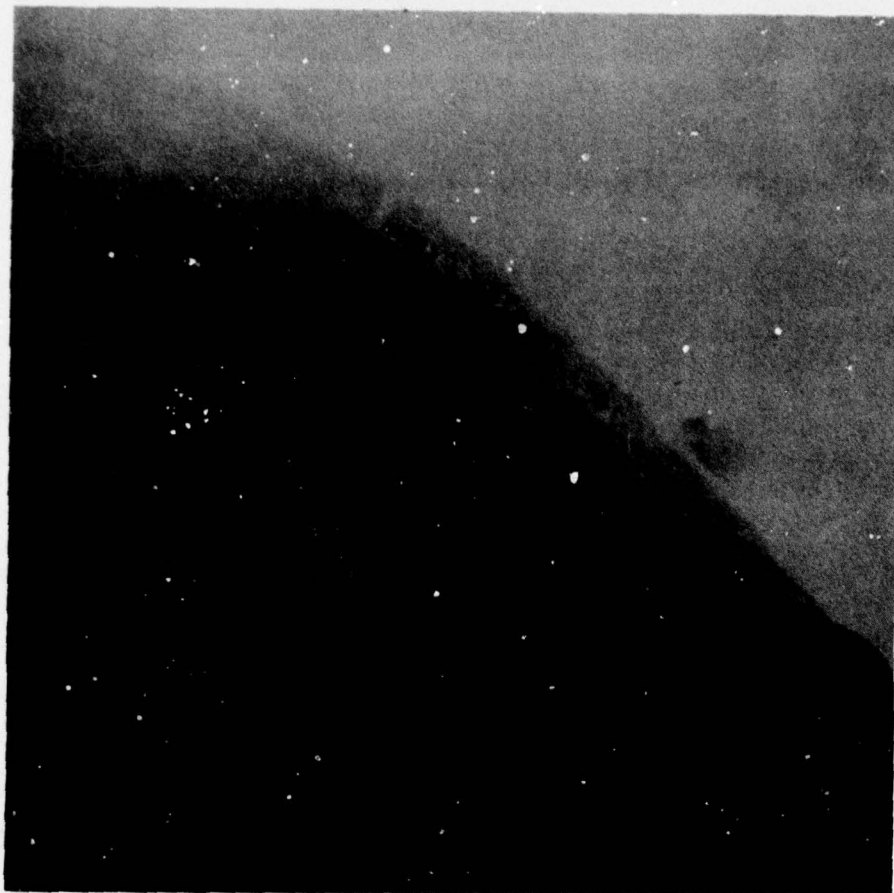
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View of damage to stack near top of stack. ABCR Photo No. 6004-1.

41 -
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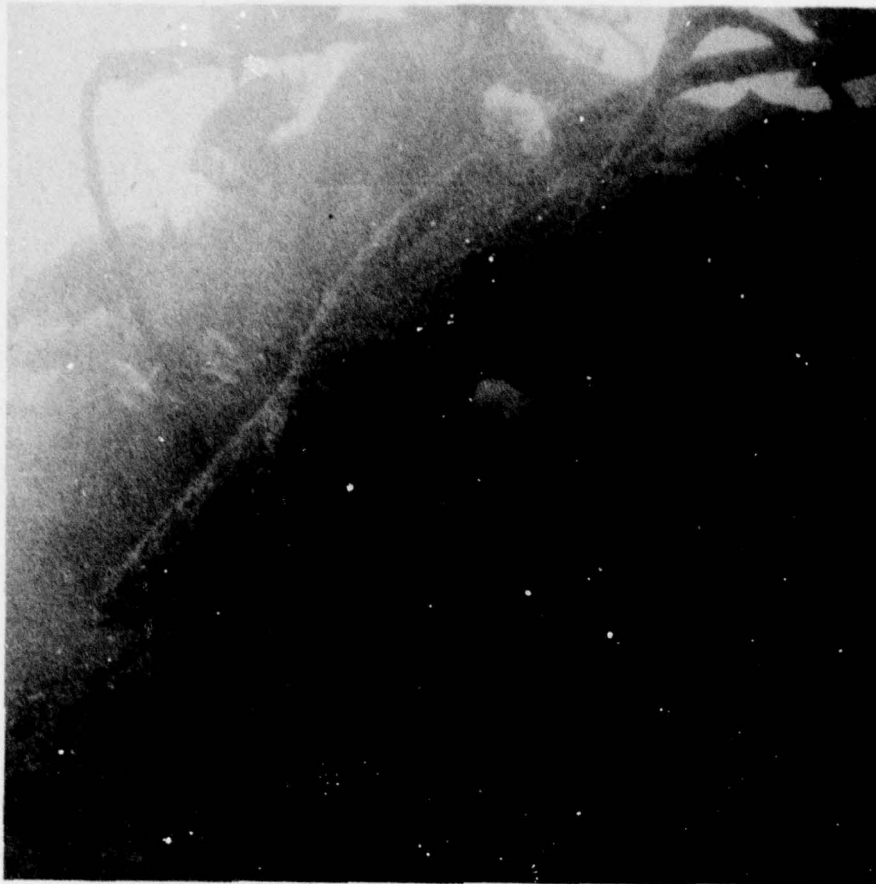


View of damage to stack near top of stack. ABCR Photo No. 6004-2.

- 42 -

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[REDACTED] UNCLASSIFIED

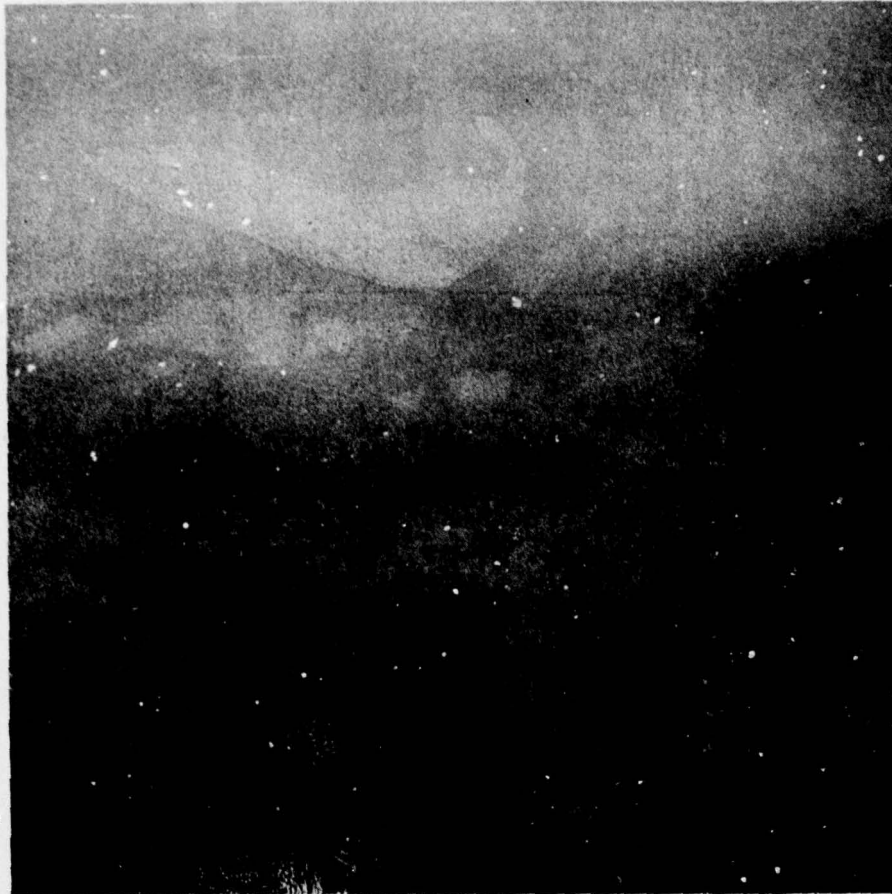


Torn up platform presumably for search light forward side of
stack. ABCR Photo No. 6004-3.

- 43 -

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Damage to forward edge of stack. ABCR Photo No. 6004-4.

- 44 -

[REDACTED]
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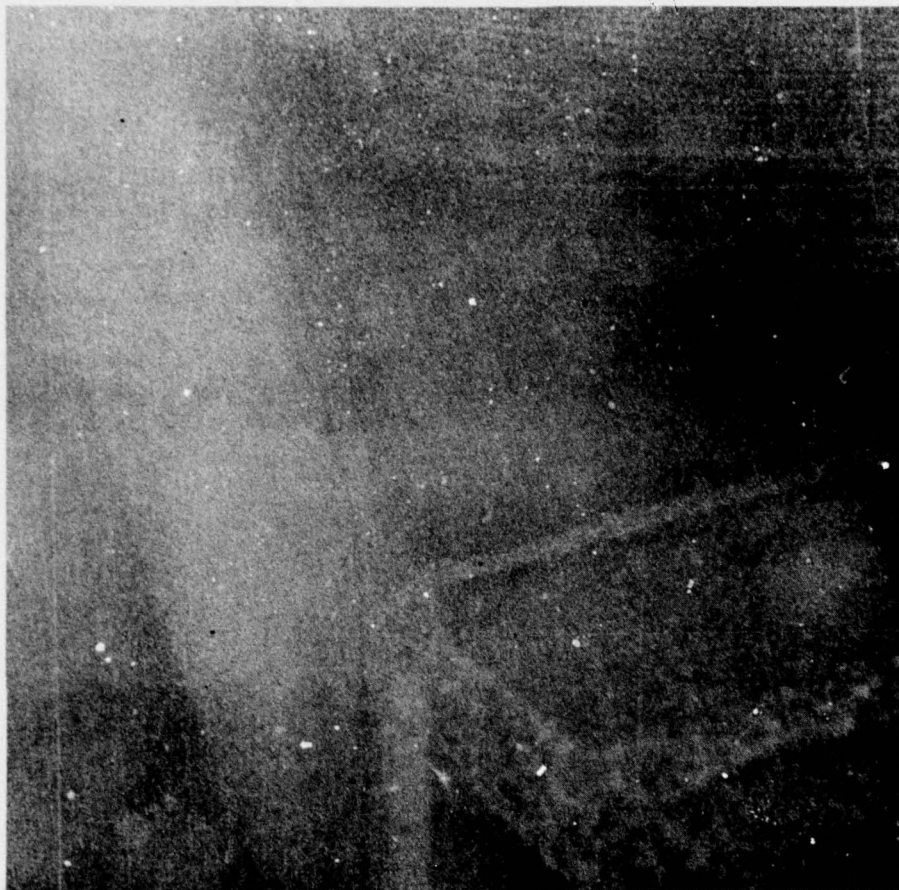


Damage around uptakes where stack is broken off, forward edge.
ABCR Photo No. 6004-7.

- 45 -

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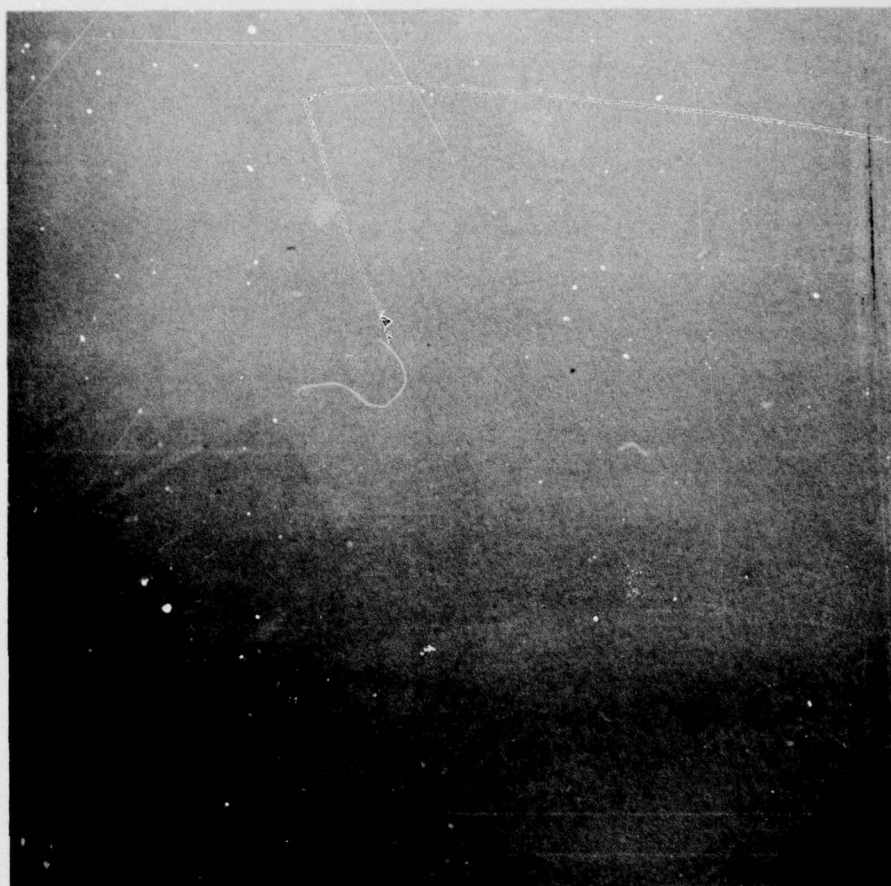


Unidentified damage near stack, presumably near forward edge of uptakes. ABCR Photo No. 6004-9.

- 46 -

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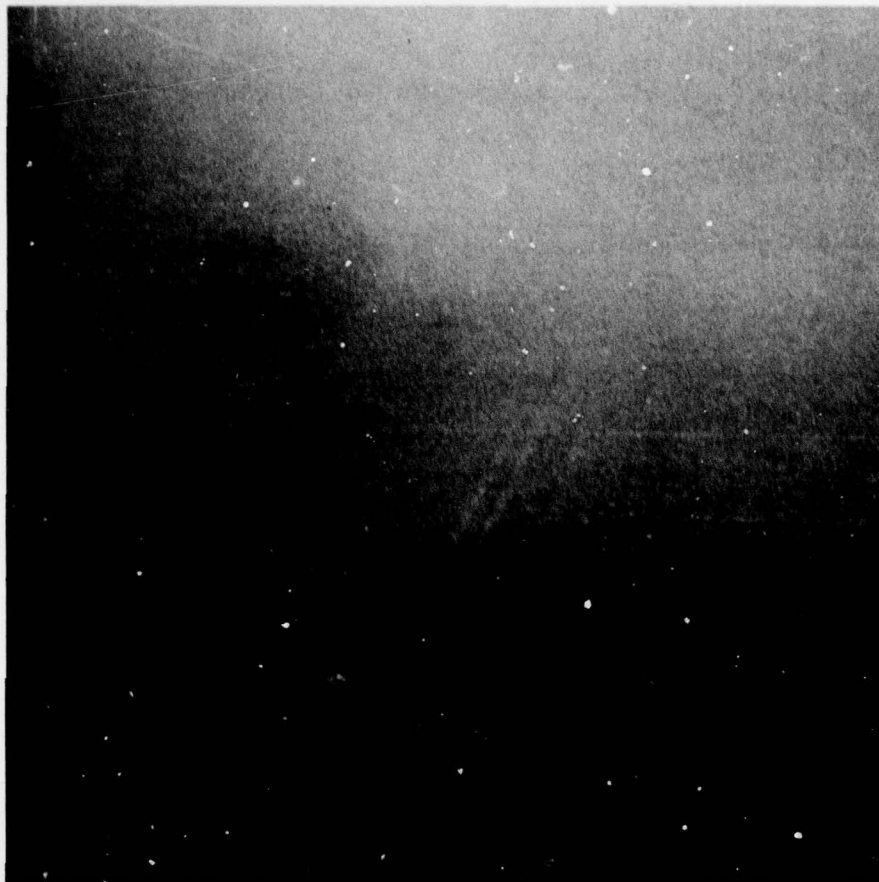
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Catwalk from forward superstructure to stack. ABCR Photo No.
6005-4.

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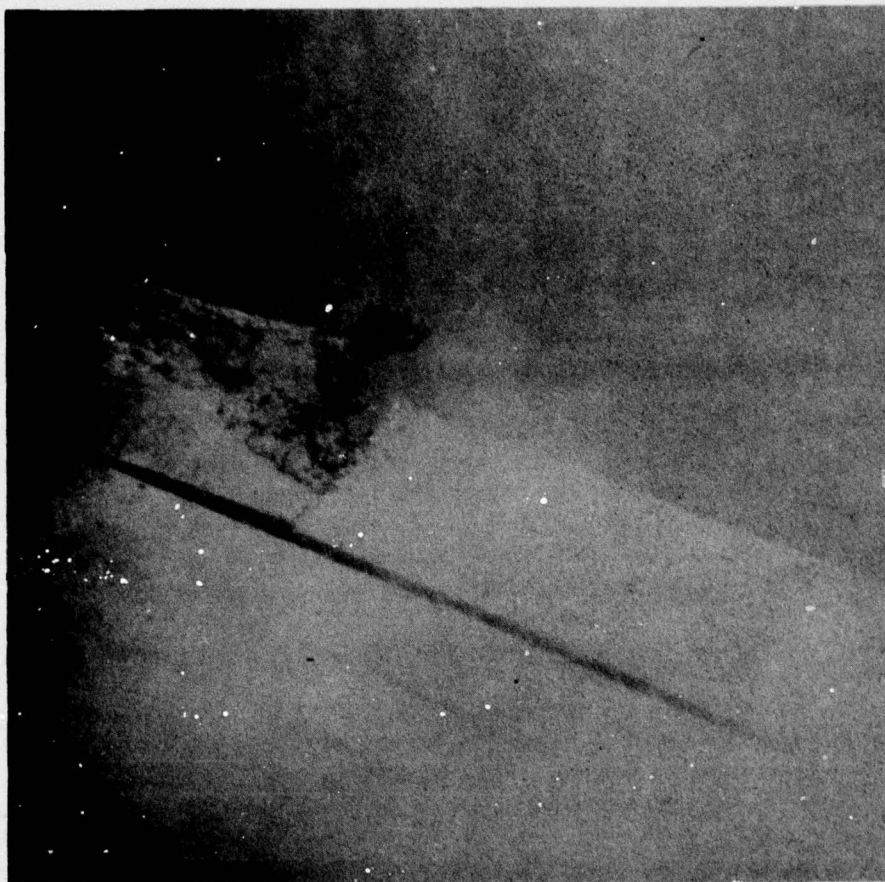
UNCLASSIFIED [REDACTED]



Airplane securing track. ABCR Photo No. 6005-5.

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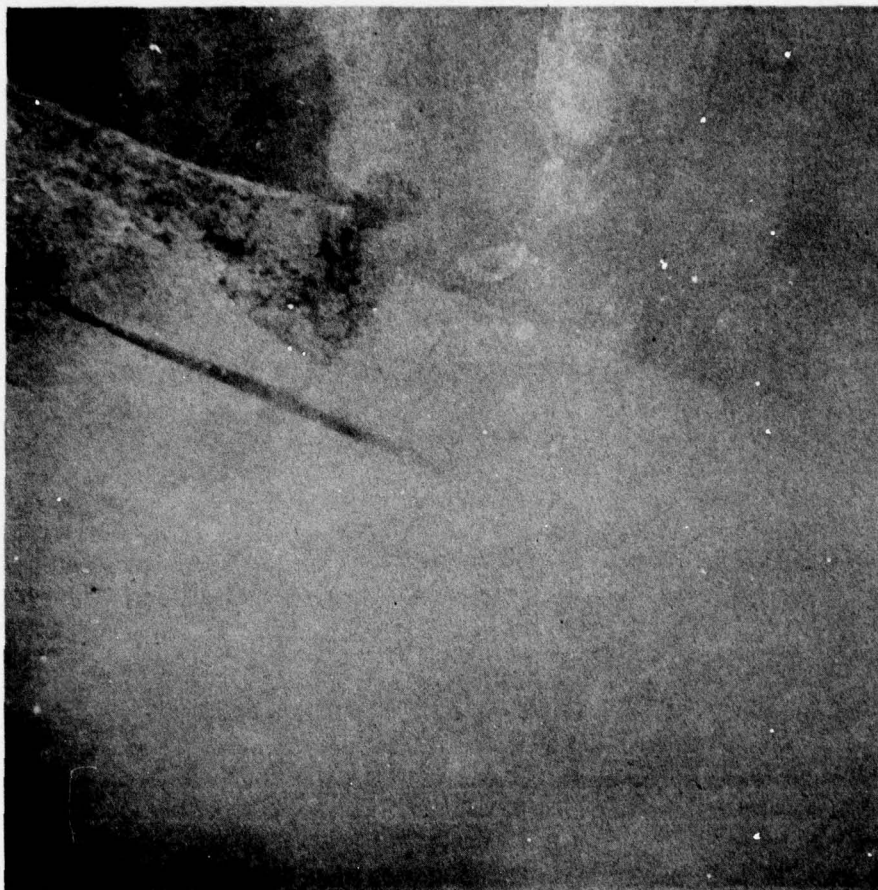
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Damaged wood decking in way of broken stanchion, starboard side, between 5" 38 cal. mount #5 and forward deck house, about frame 59. ABCR Photo No. 6005-8.

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UNCLASSIFIED [REDACTED]

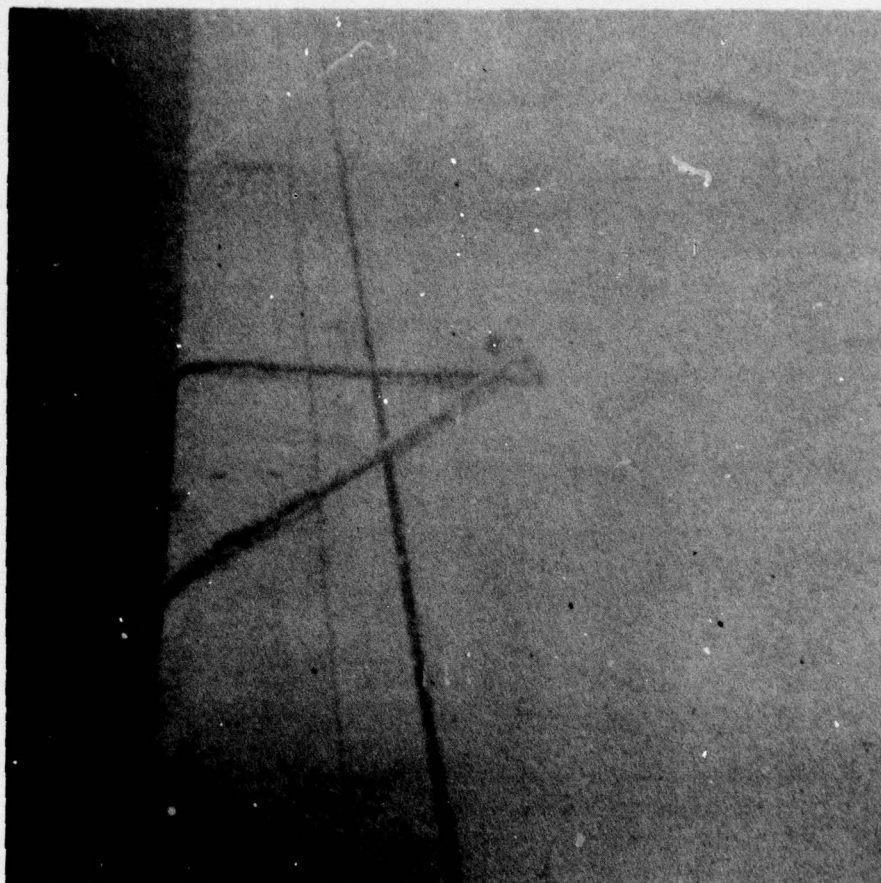


Damaged wood decking in way of broken stanchion, starboard side, between 5" 38 cal. mount #5 and forward deck house, about frame 59. ABCR Photo No. 6005-9.

- 50 -

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Forward edge of aircraft elevator hatch looking to port. ABCR
Photo No. 6005-10.

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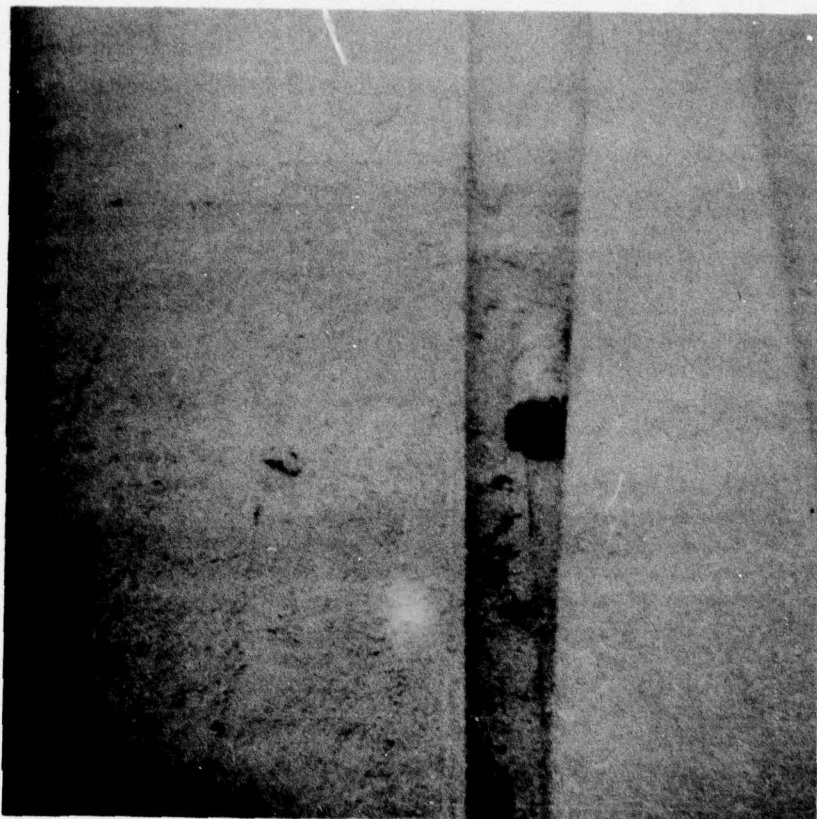


Port forward edge of elevator hatch. ABCR Photo No. 6005-11.

- 52 -

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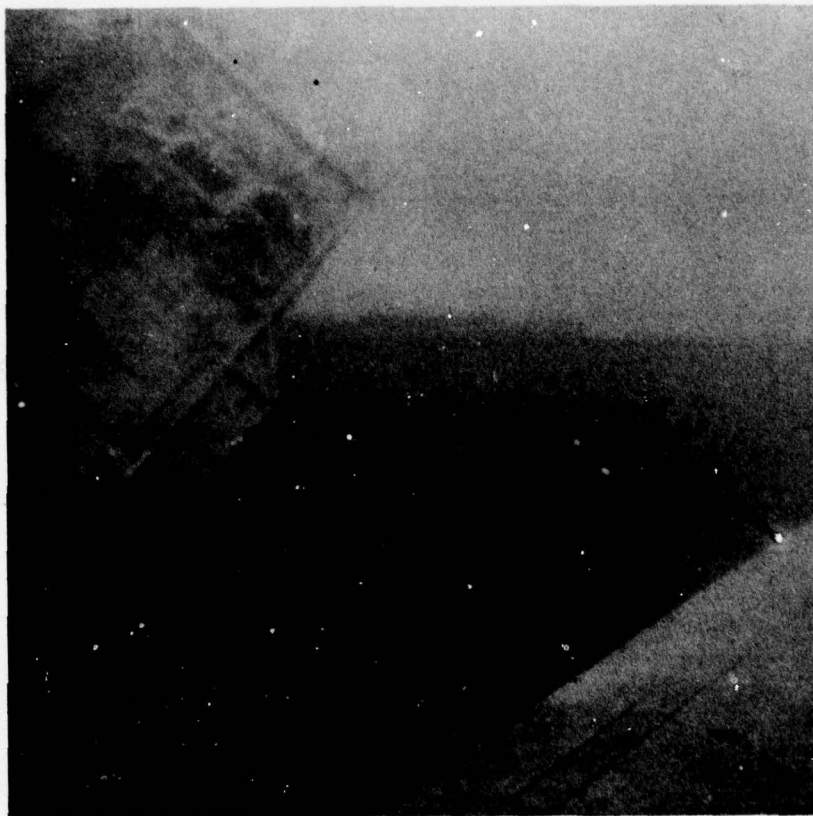
Waterway cover about frame 71 knocked out of waterway by force of shock. ABCR Photo No. 6005-12.

- 53 -

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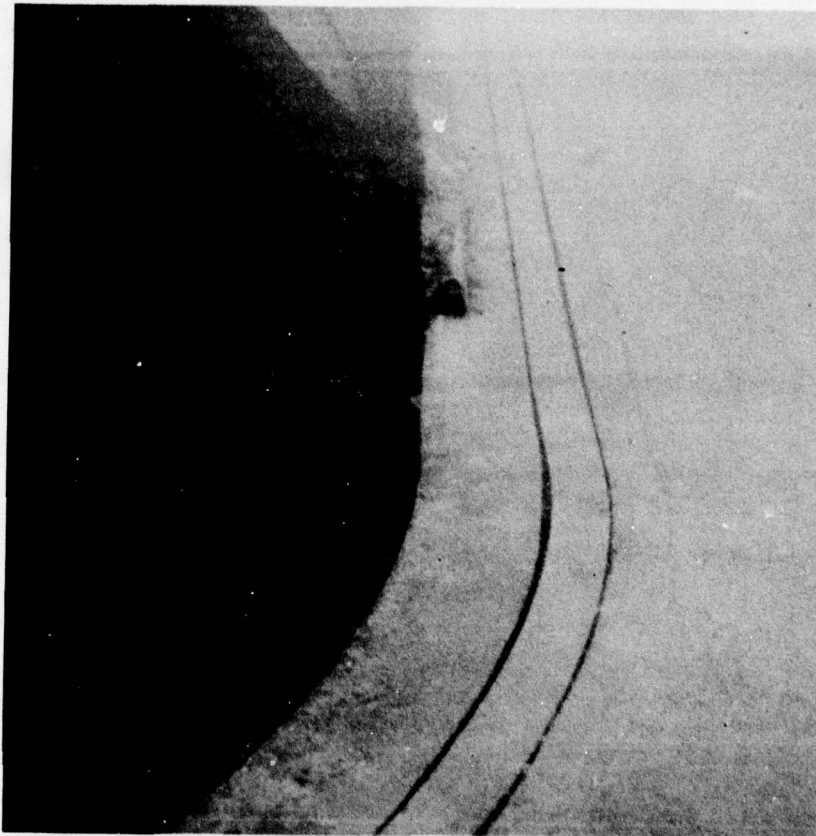
Aircraft elevator and hatch after port edge looking aft and to starboard. ABCR Photo No. 6005-14.

- 54 -

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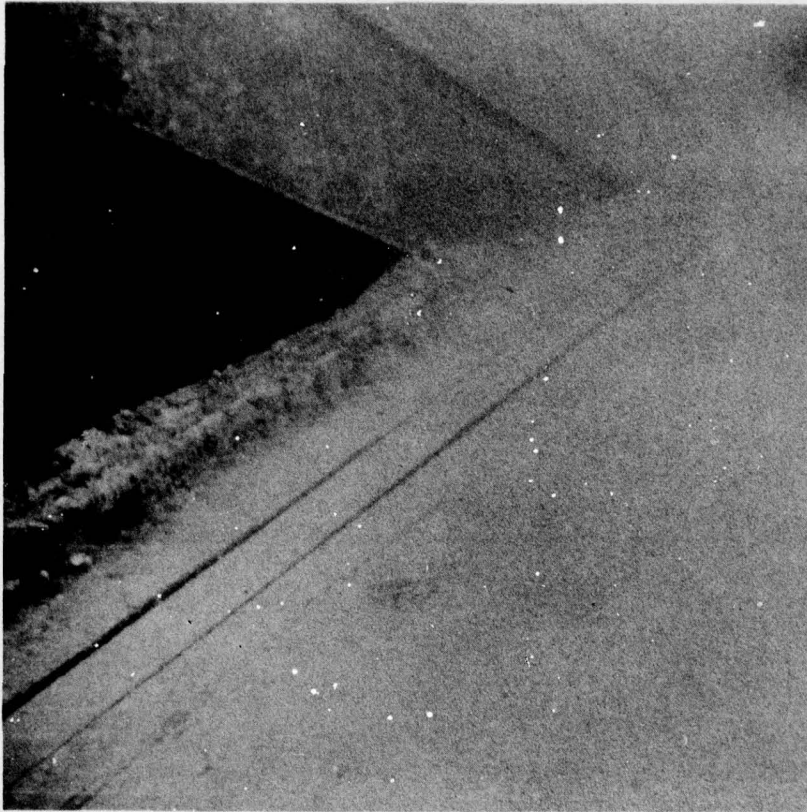
After port edge of aircraft elevator hatch looking to starboard. ABCR Photo No. 6005-15.

- 55 -

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After edge of aircraft elevator lying diagonally in hatch,
looking to starboard bow. ABCR Photo No. 6005-16.

- 56 -

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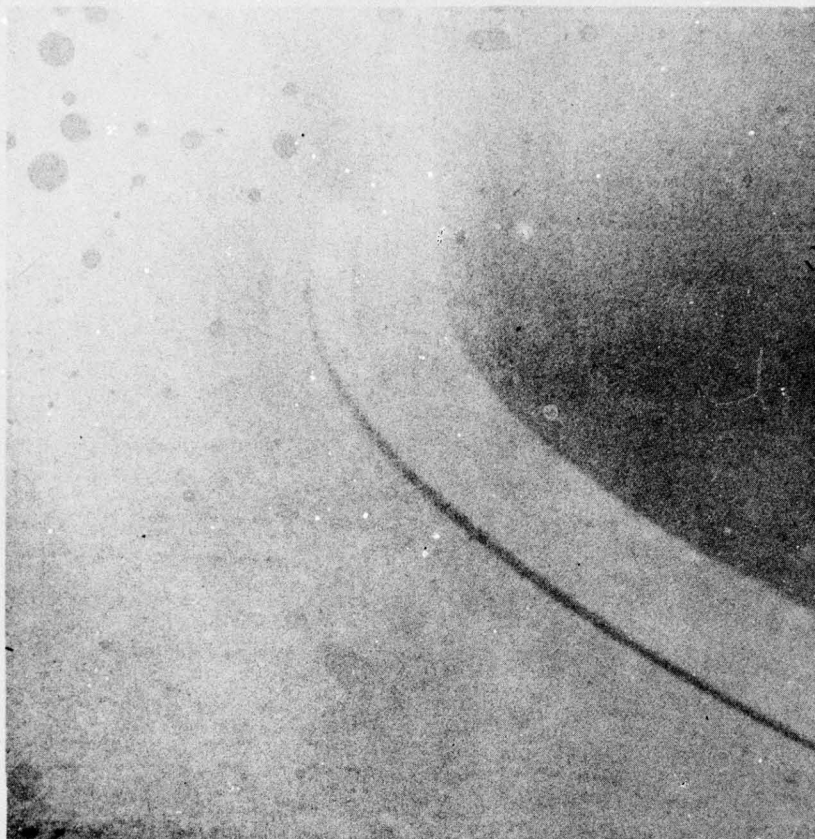
Radar Antenna found on stack top lying across flight deck,
looking aft. ABCR Photo No. 6005-17.

- 57 -

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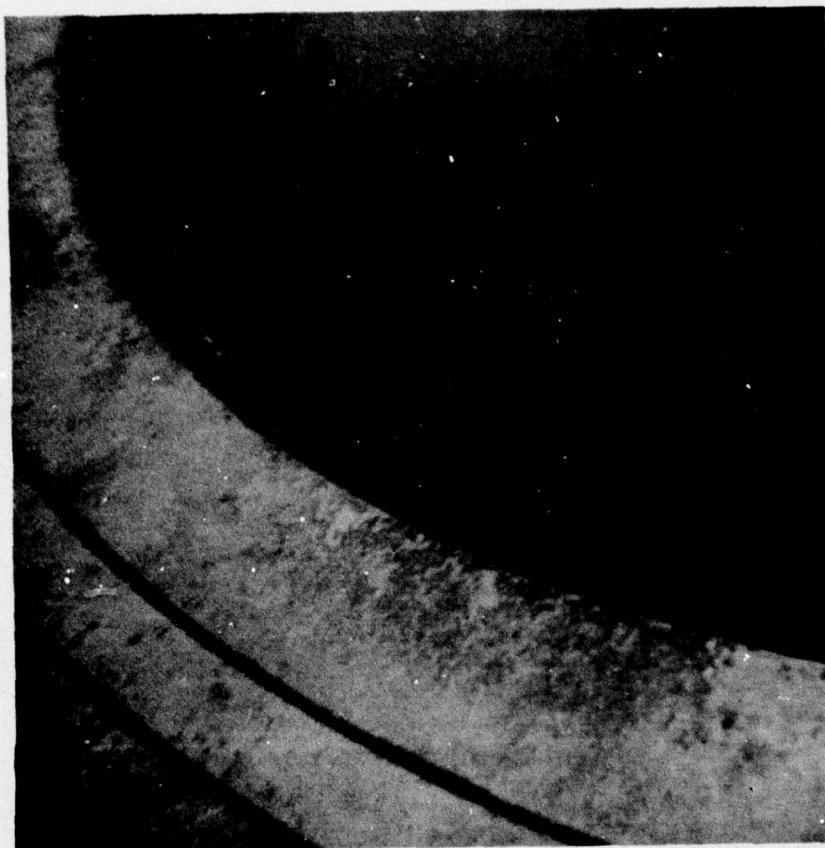
After port edge of aircraft elevator hatch looking forward.
ABCR Photo No. 6005-18.

- 58 -

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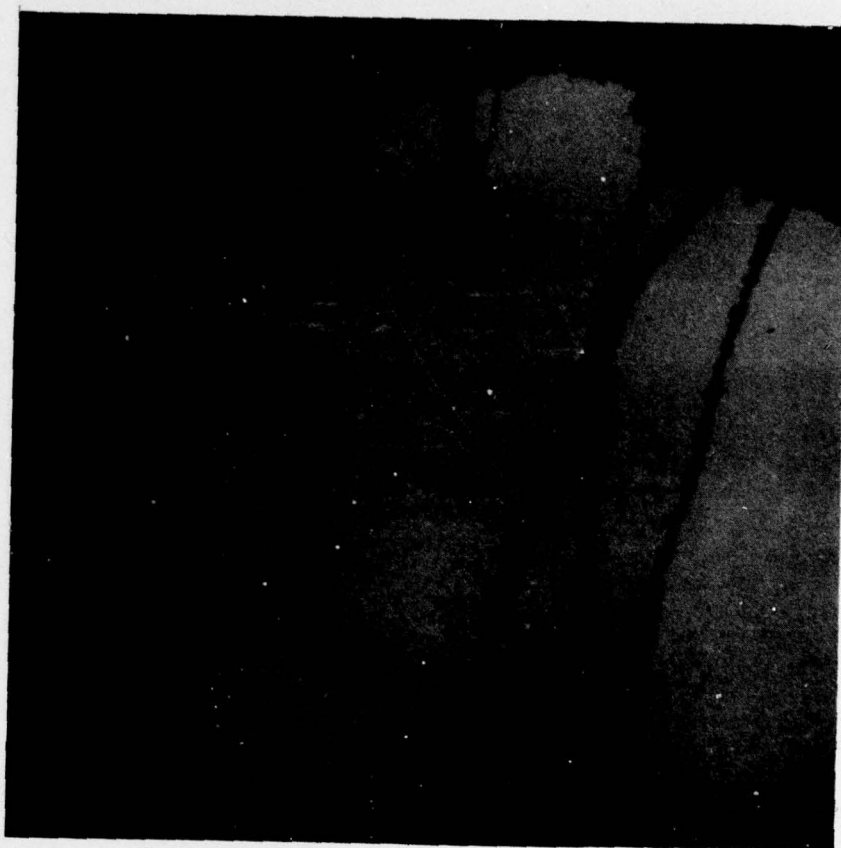


After port edge of aircraft elevator hatch, showing elevator
guide rack. ABCR Photo No. 6005-19.

- 59 -

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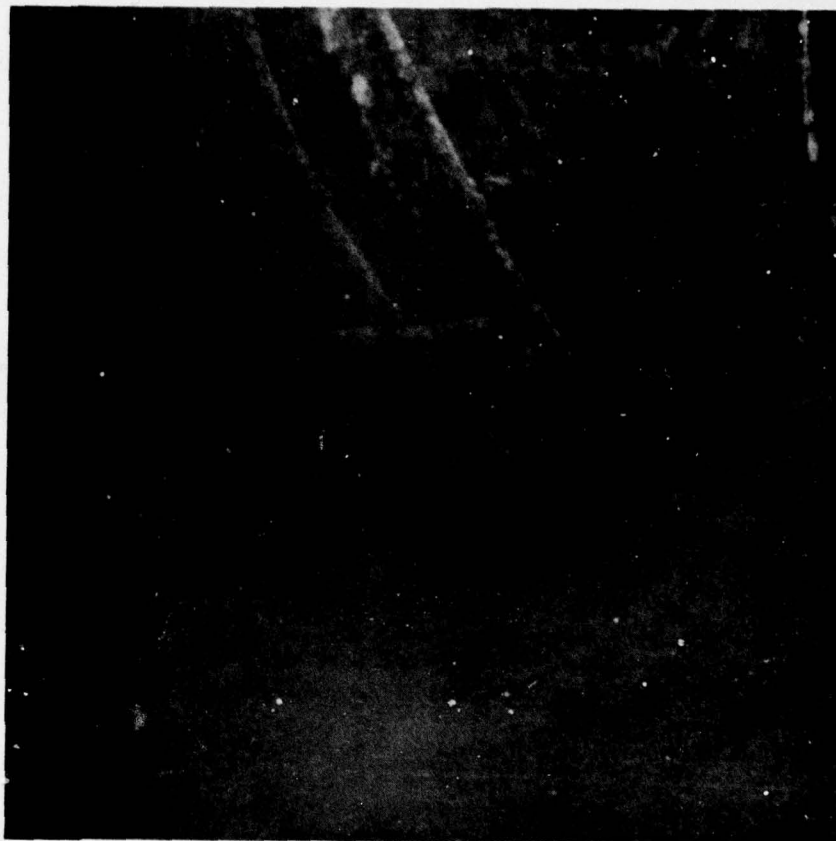
Damaged stack below radar platform. ABCR Photo No. 6005-21.

- 60 -

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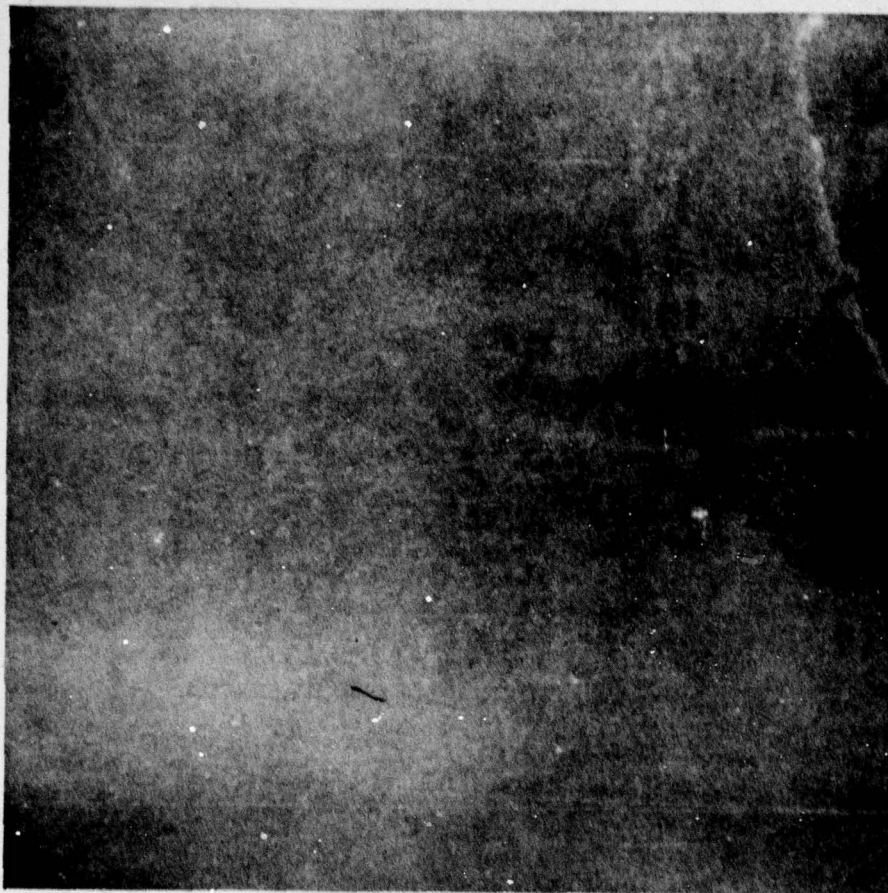
Radar platform on forward edge of stack. ABCR Photo No. 6005-22.

- 61 -

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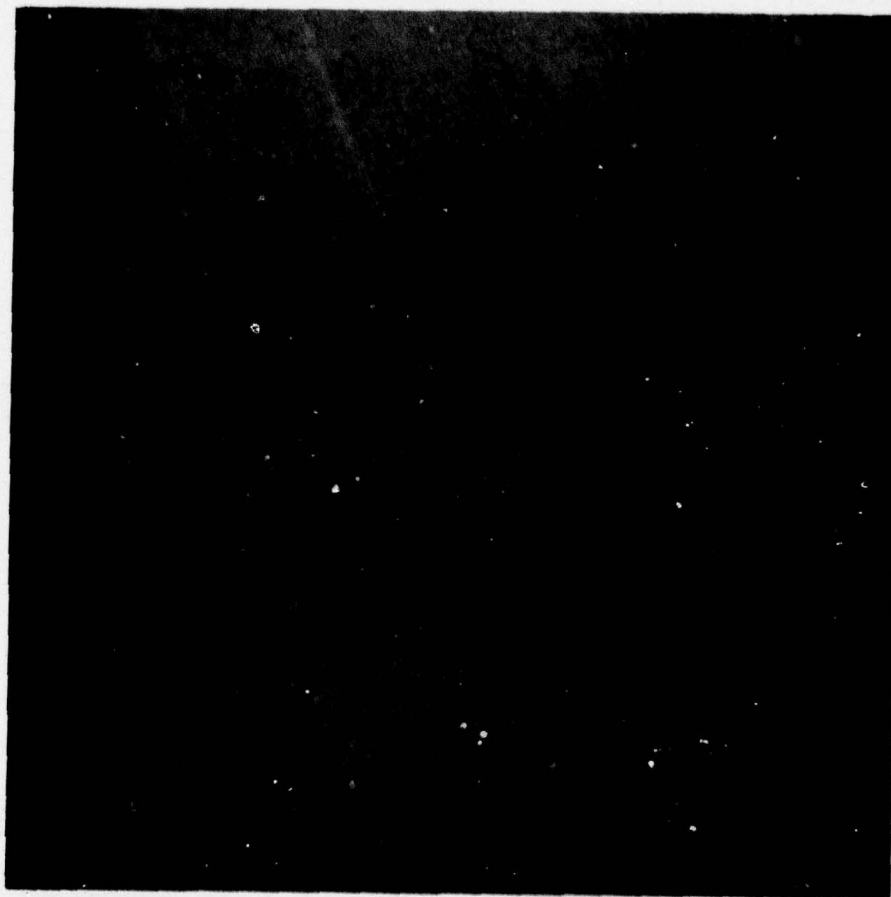


24" searchlight platform on forward edge of stack. ABCR Photo No. 6005-23.

- 62 -

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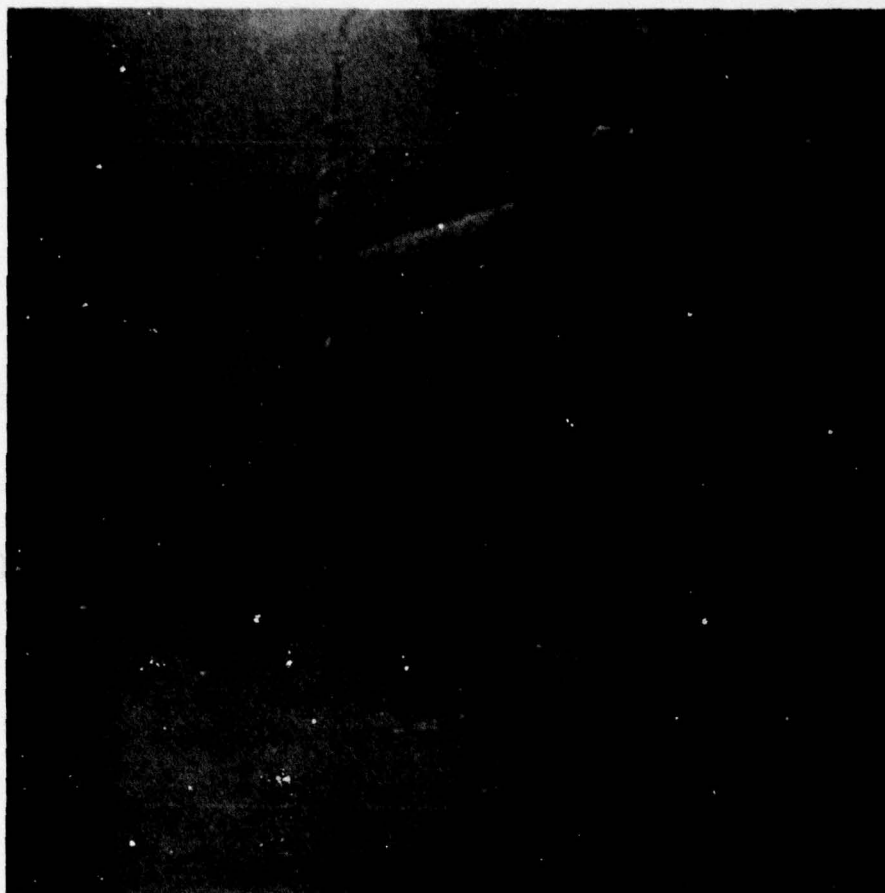


24" searchlight platform on forward edge of stack. ABCR Photo
No. 6005-24.

- 63 -

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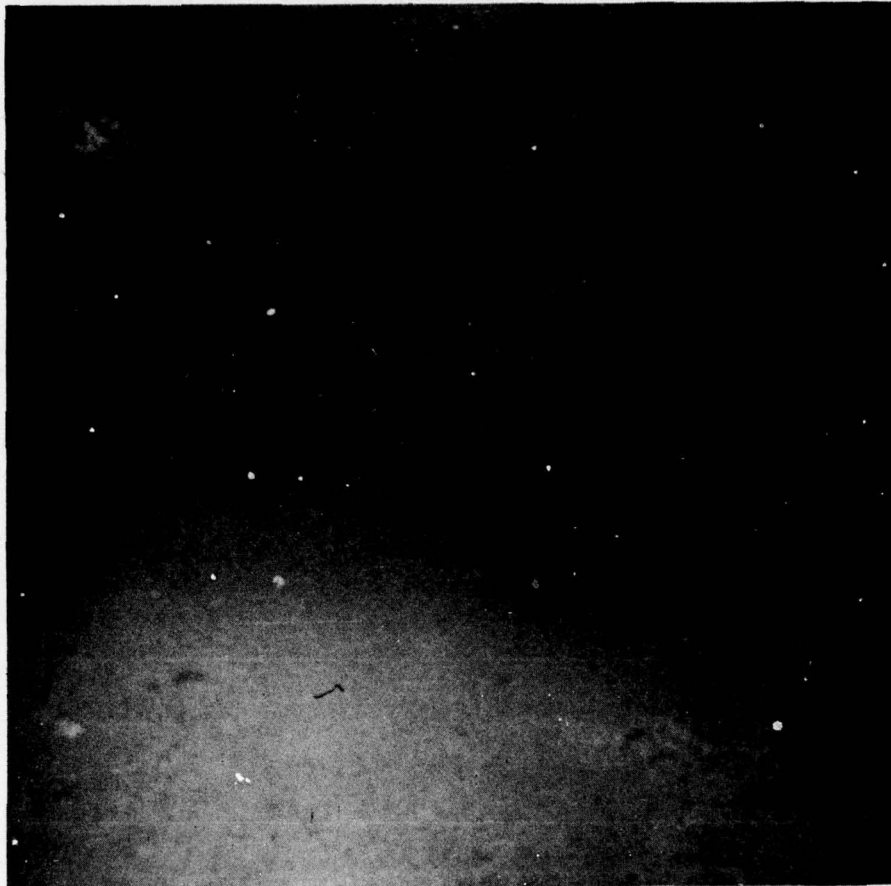


24" searchlight platform on forward edge of stack. ABCR Photo
No. 6005-25.

- 64 -

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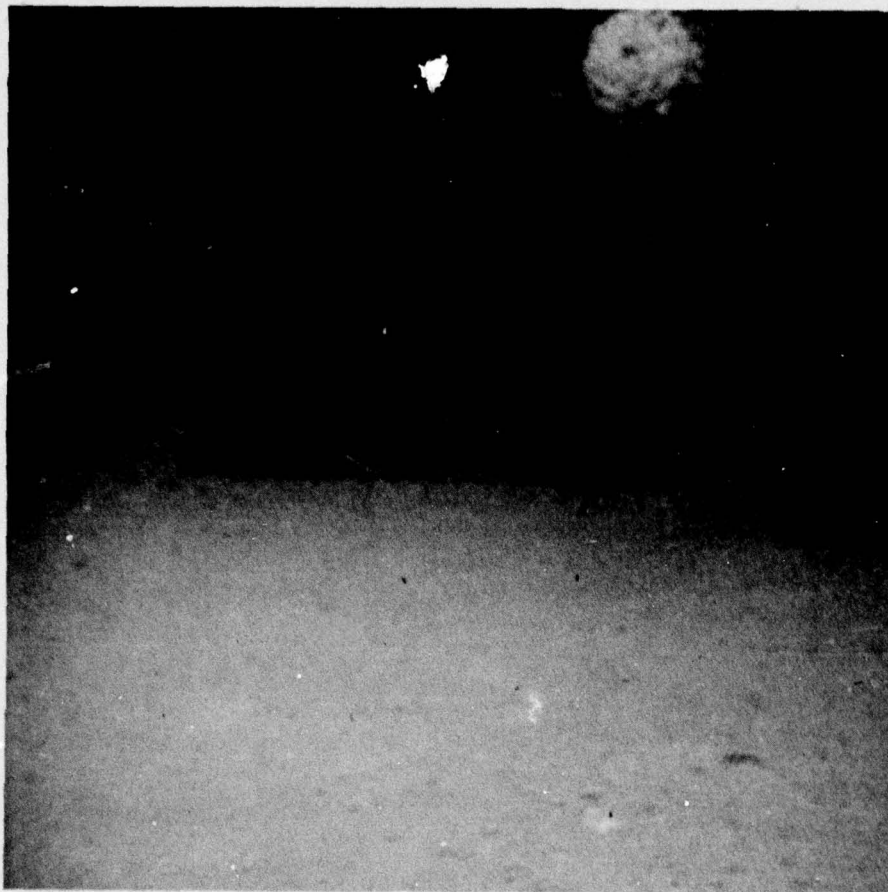


Aircraft wreckage under stack. ABCR Photo No. 6005-26.

- 65 -

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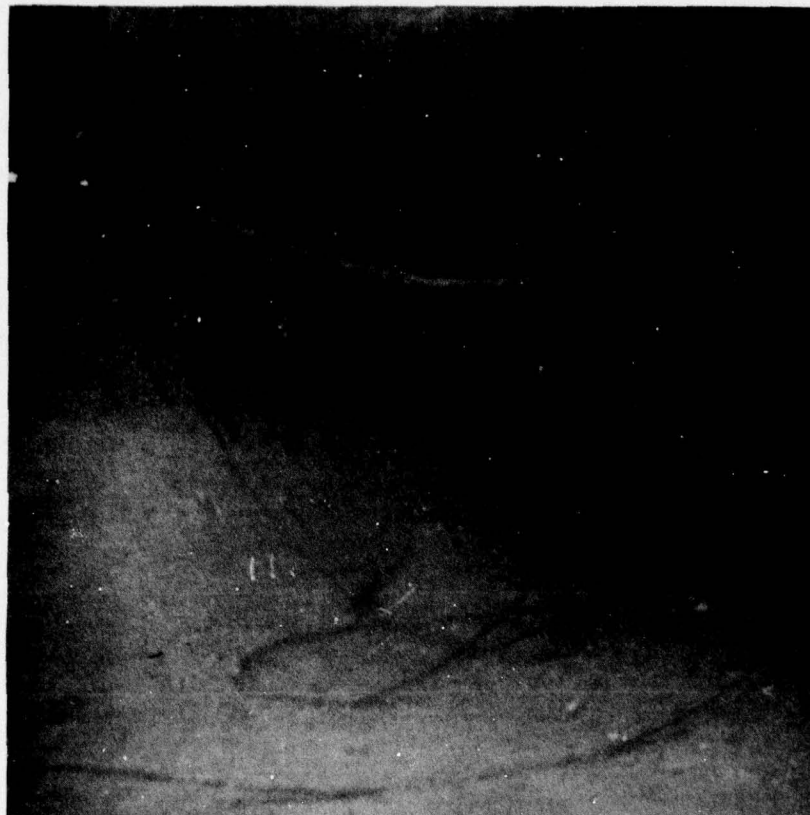
Aircraft wreckage under stack. ABCR Photo No. 6005-27.

- 66 -

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Base of stack lying on flight deck. ABCR Photo No. 6005-28.

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- 54 -
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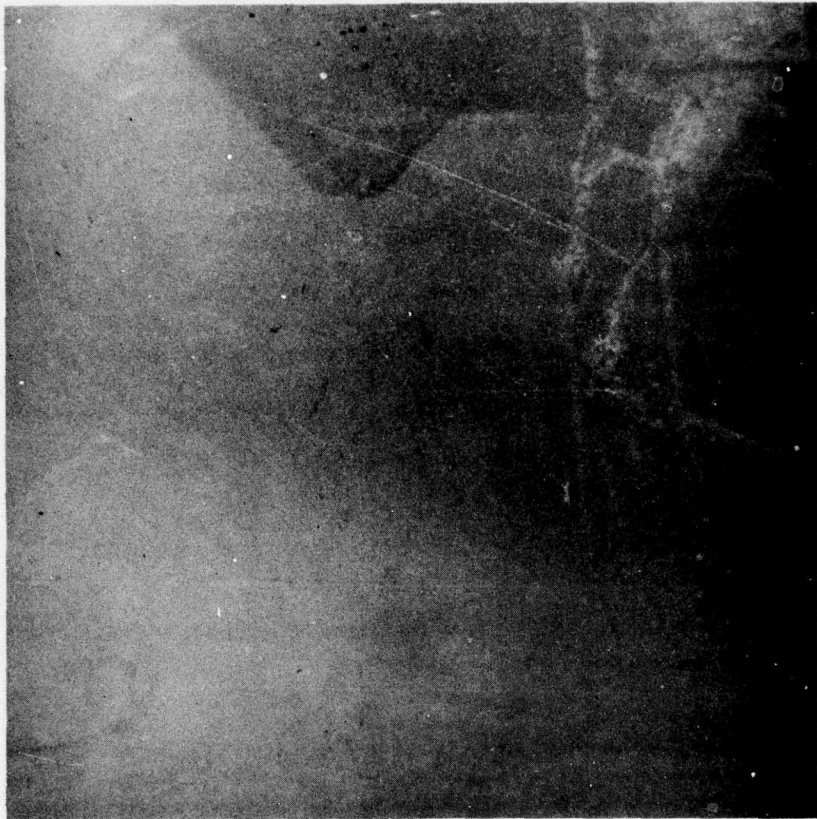
#1 uptake in forward edge of uptake looking down and aft.
ABCR Photo No. 6005-29.

- 68 -

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Wreckage at base of stack. ABCR Photo No. 6005-30.

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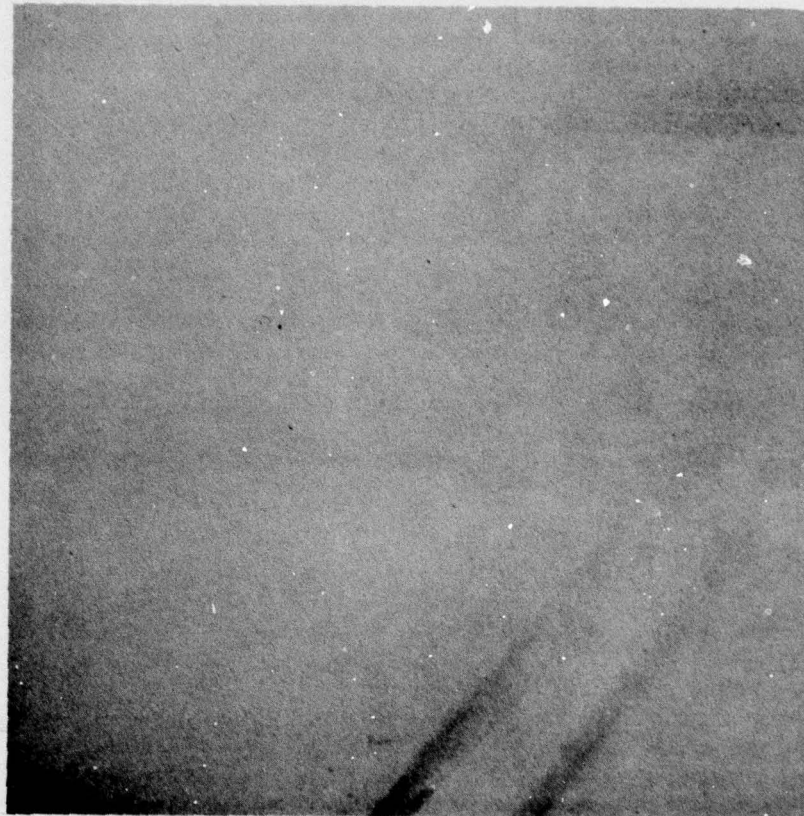


View of starboard catapult and plane securing track showing double warped surface of flight deck forward. ABCR Photo No. 6007-2.

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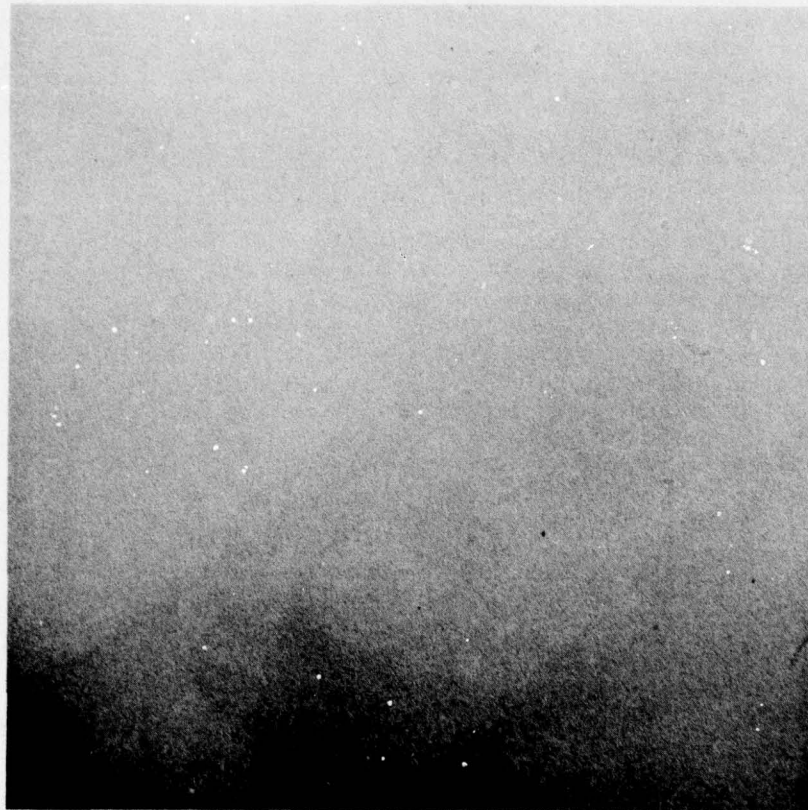


Waterway cover jarred out of waterway about frame 71. ABCR
Photo No. 6007-3.

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Aircraft elevator, after port edge. ABCR Photo No. 6007-4.

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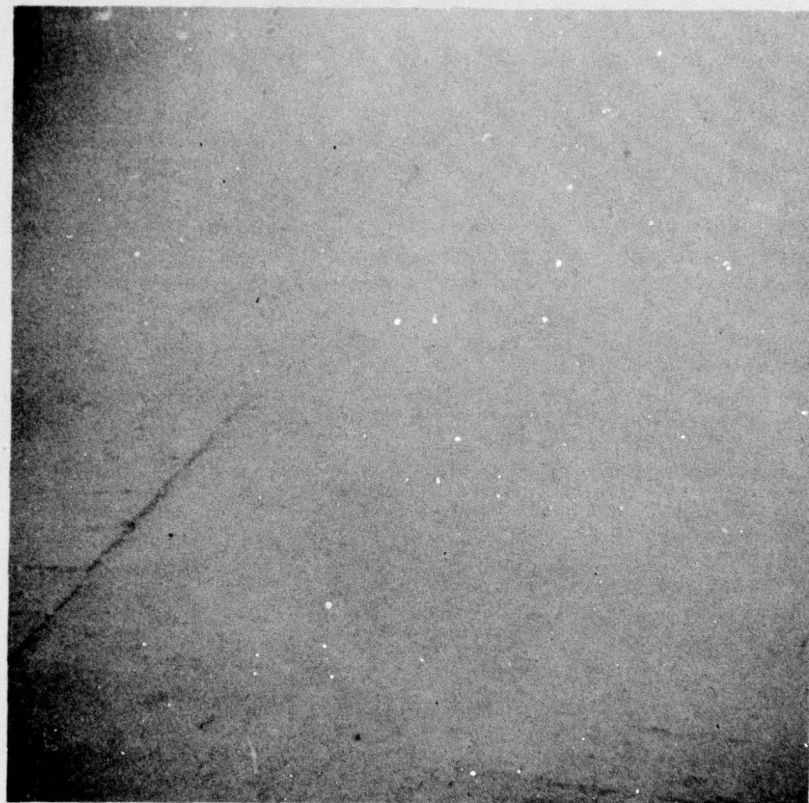


Aircraft elevator showing relative position in hatch. ABCR
Photo No. 6007-5.

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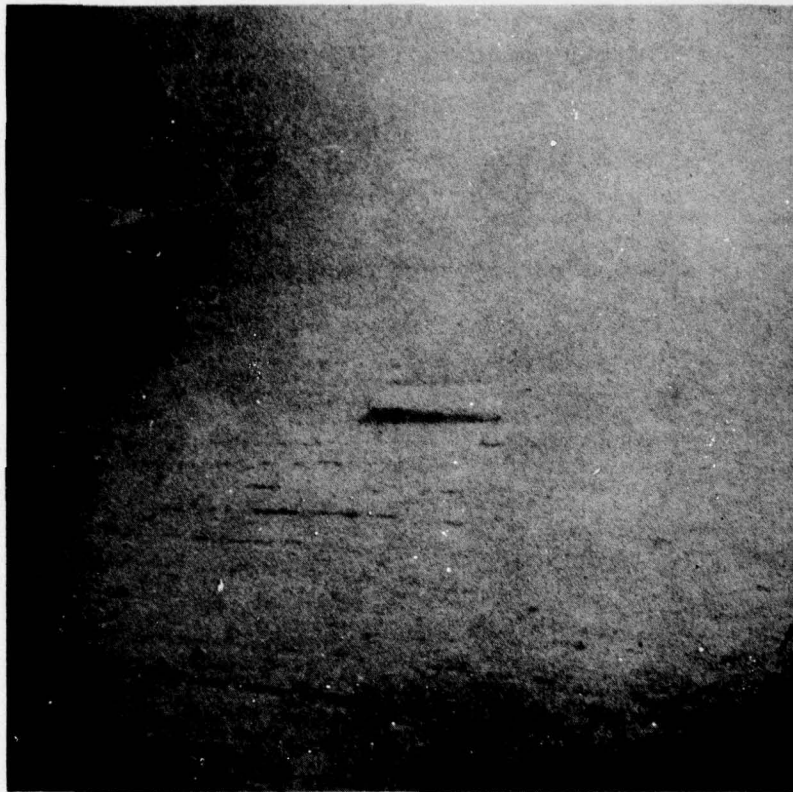


Damaged wood decking in way of top forward end of stack. ABCR
Photo No. 6007-6.

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Damaged wood decking in way of top forward end of stack. ABCR
Photo No. 6007-8.

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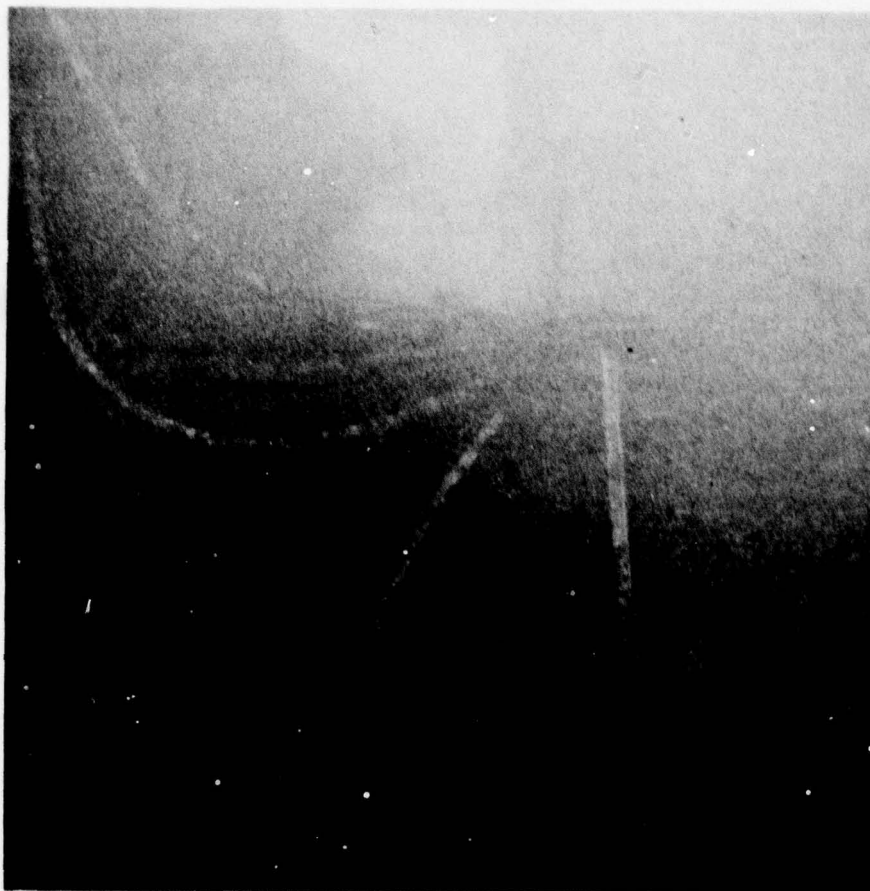


Damaged wood decking in way of top forward end of stack. ABCR
Photo No. 6007-7.

- 76 -

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Looking through stack showing ruptured plating from top of
stack to bottem, across flight deck. ABCR Photo No. 6007-9.

- 77 -

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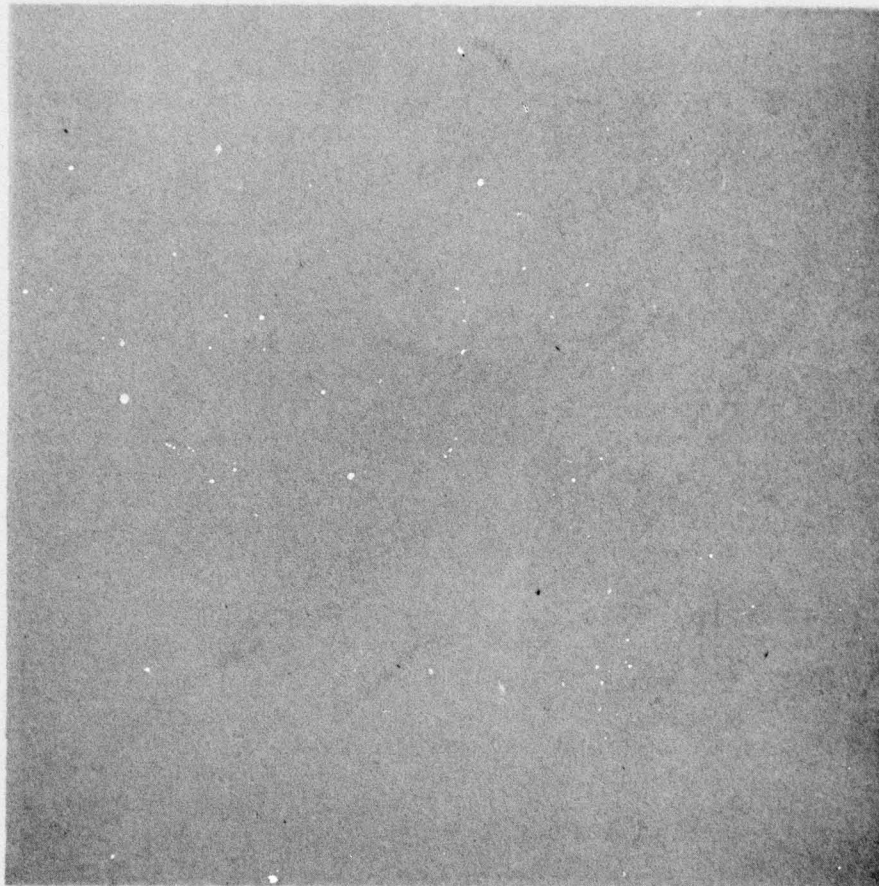
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Damaged wood decking in way of top forward end of stack. ABCR
Photo No. 6007-10.

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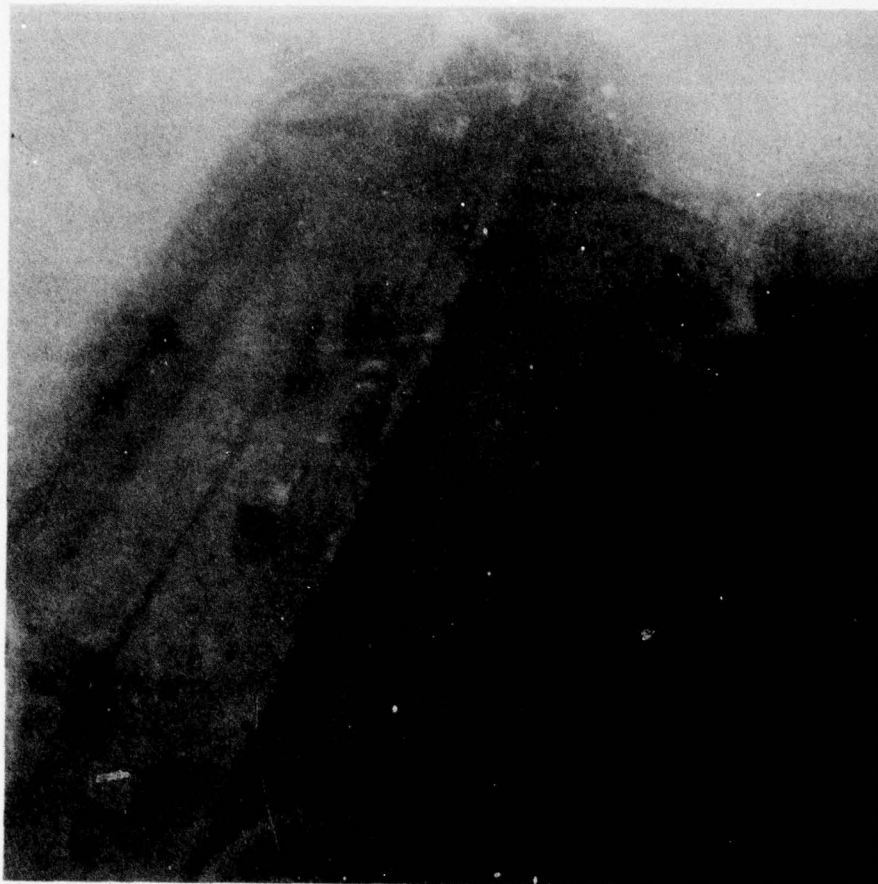


Damaged wood decking in way of top forward end of stack. ABCR
Photo No. 6007-11.

- 79 -

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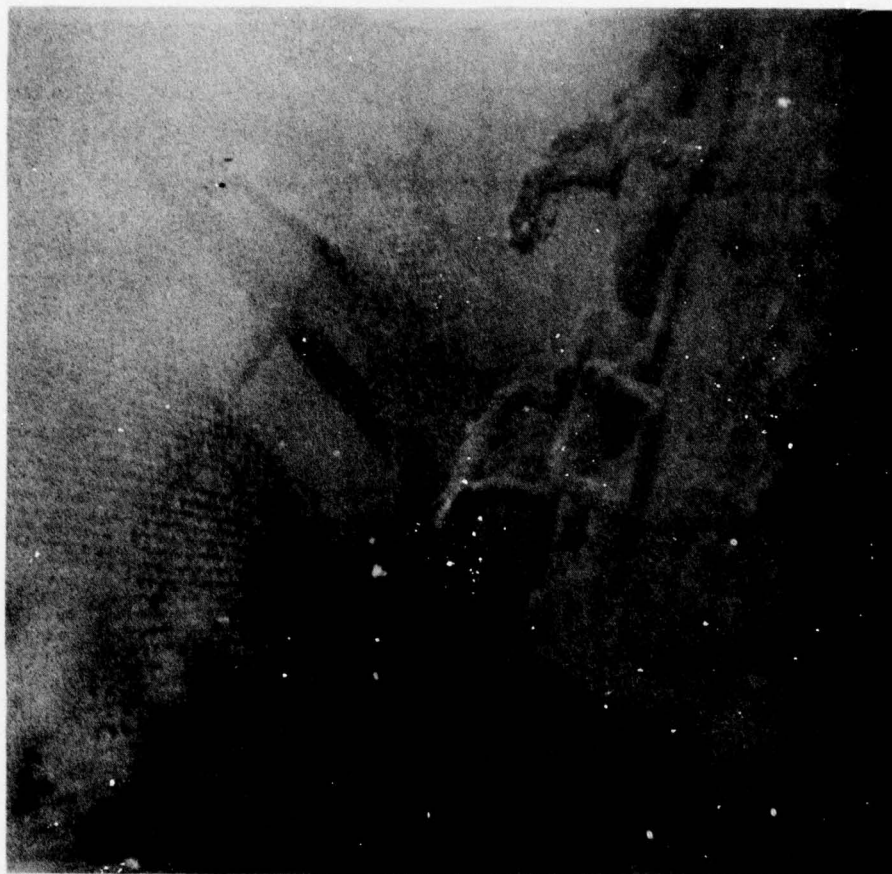


Side of ship aft of frame 190, starboard side, main deck.
ABCR Photo No. 6014-1.

- 80 -

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Buckled shell about frame 192, starboard side, below flight deck. ABCR Photo No. 6014-2.

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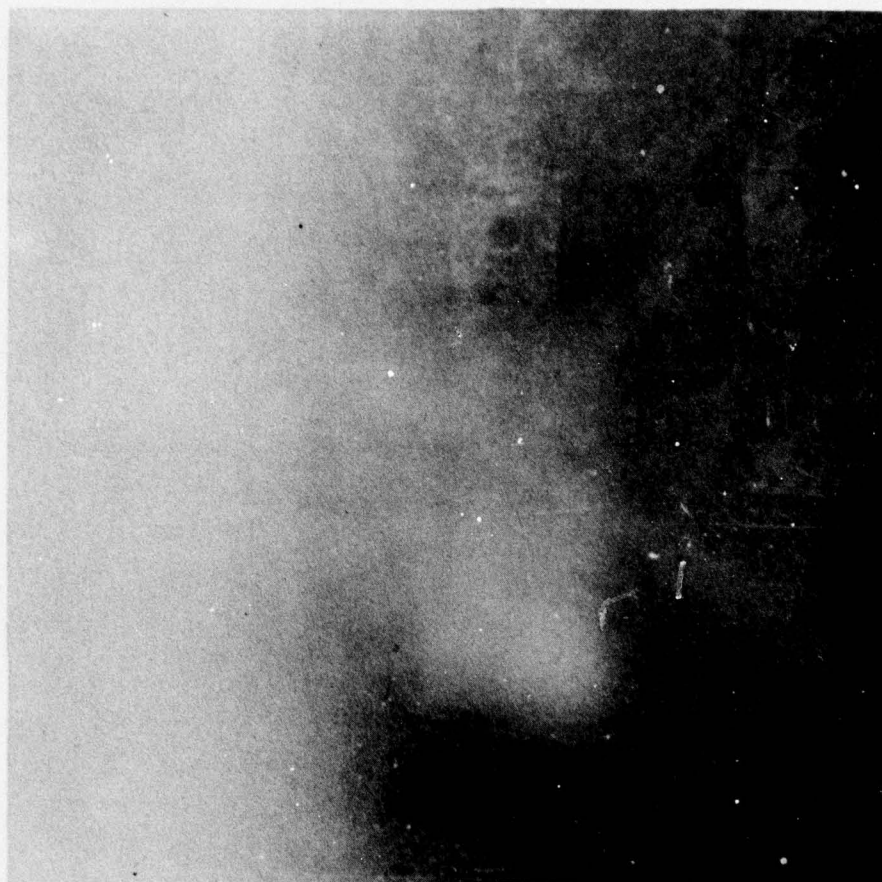


Port side, main deck, about frame 192 near crack. ABCR Photo
No. 6014-3.

- 82 -

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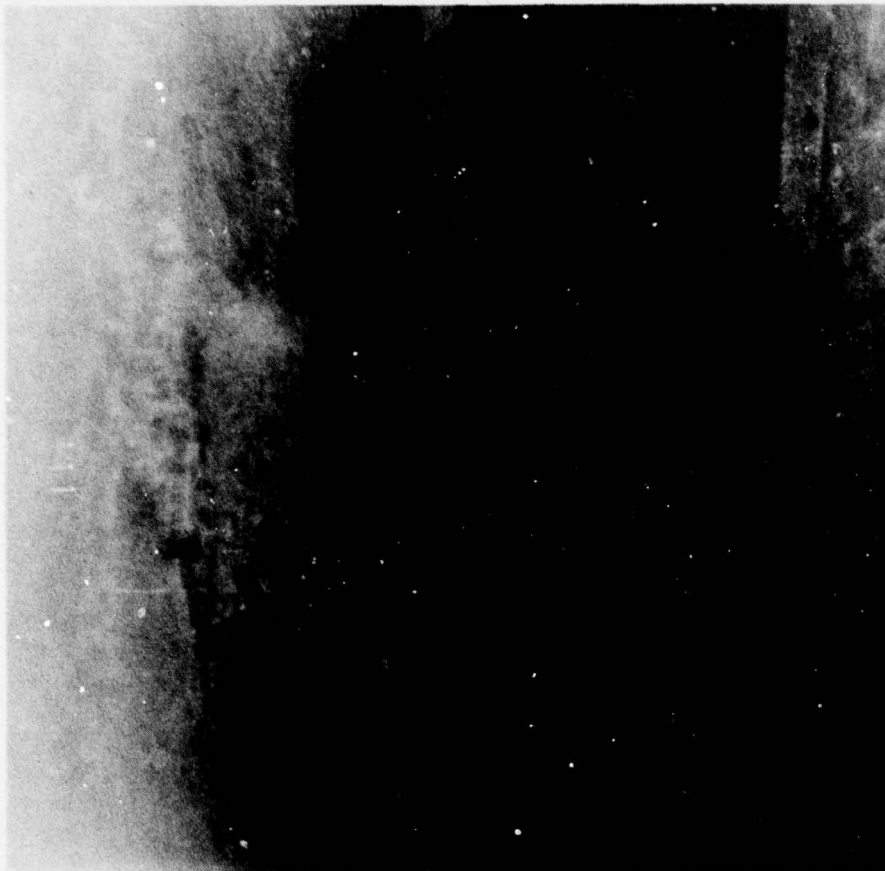
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Crack at about frame 192, port side, main deck. ABCR Photo
No. 6014-4.

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Bulge, side of shell plating in way of break in flight deck,
about frame 192. ABCR Photo No. 6014-5. END.

- 84 -

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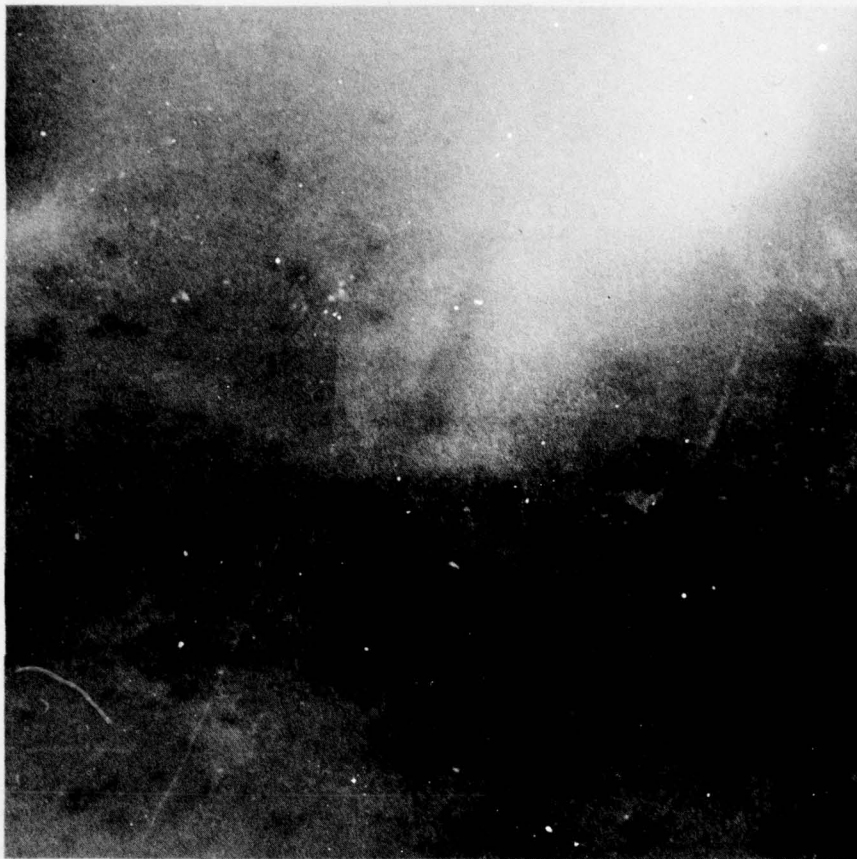


View on flight deck showing side of barrier. ABCR Photo No. 6015-4.

- 85 -

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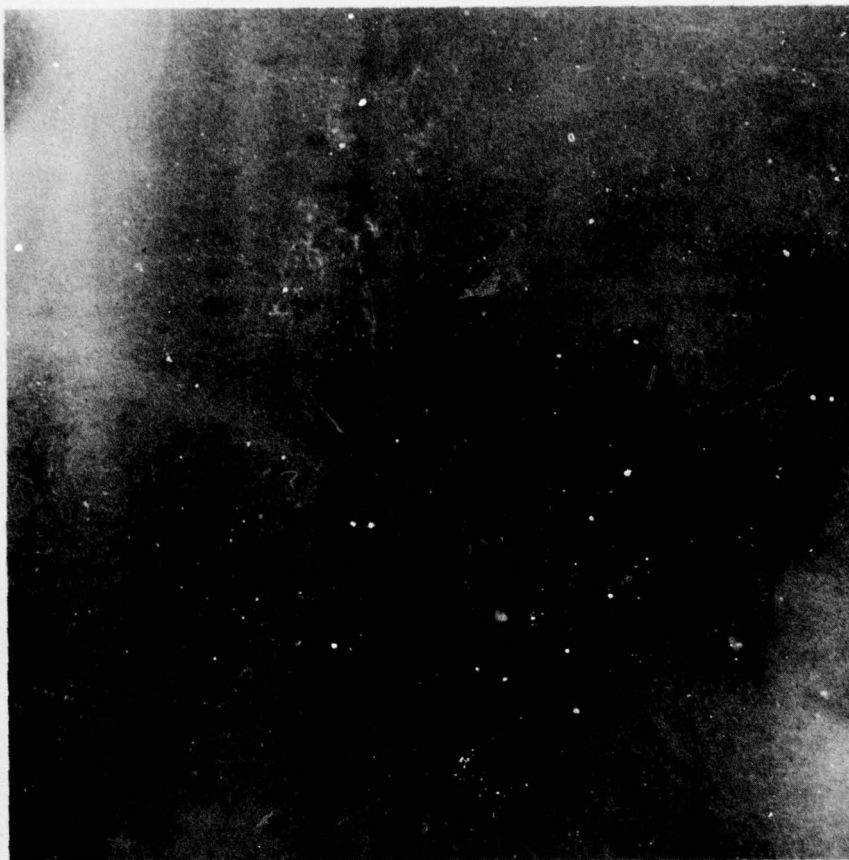


Forward port edge of ruptured plating covering #2 elevator shaft, looking aft. ABCR Photo No. 6016-2.

- 86 -

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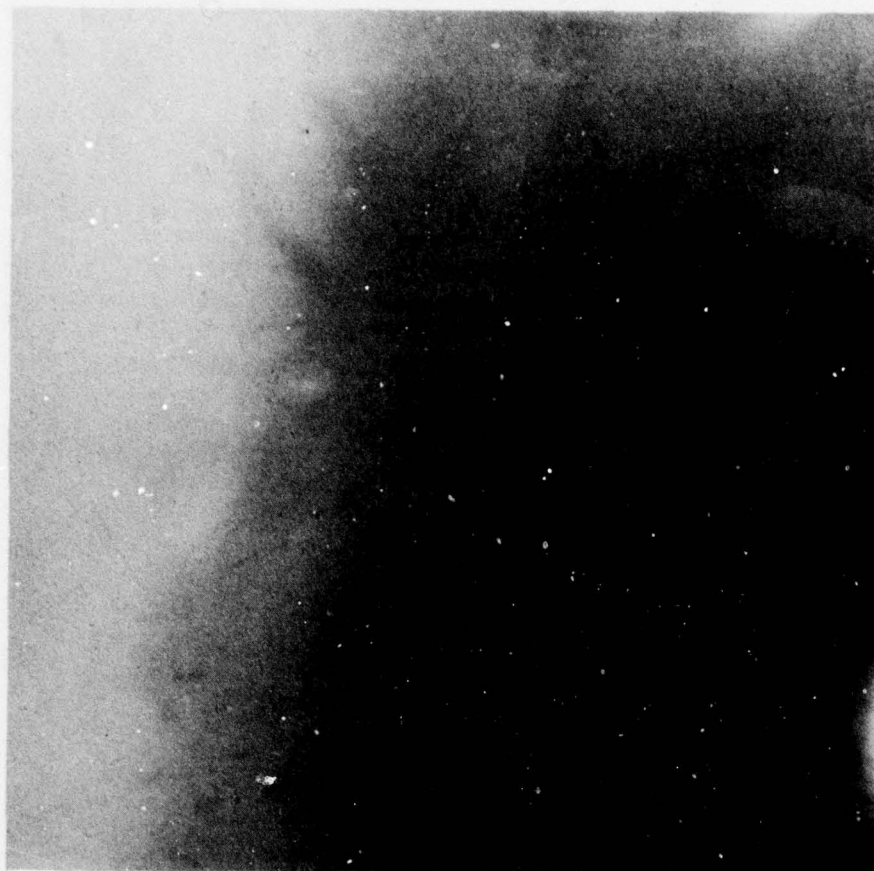


Forward port edge of ruptured plating covering #2 elevator shaft, starboard side. ABCR Photo No. 6016-3.

- 87 -

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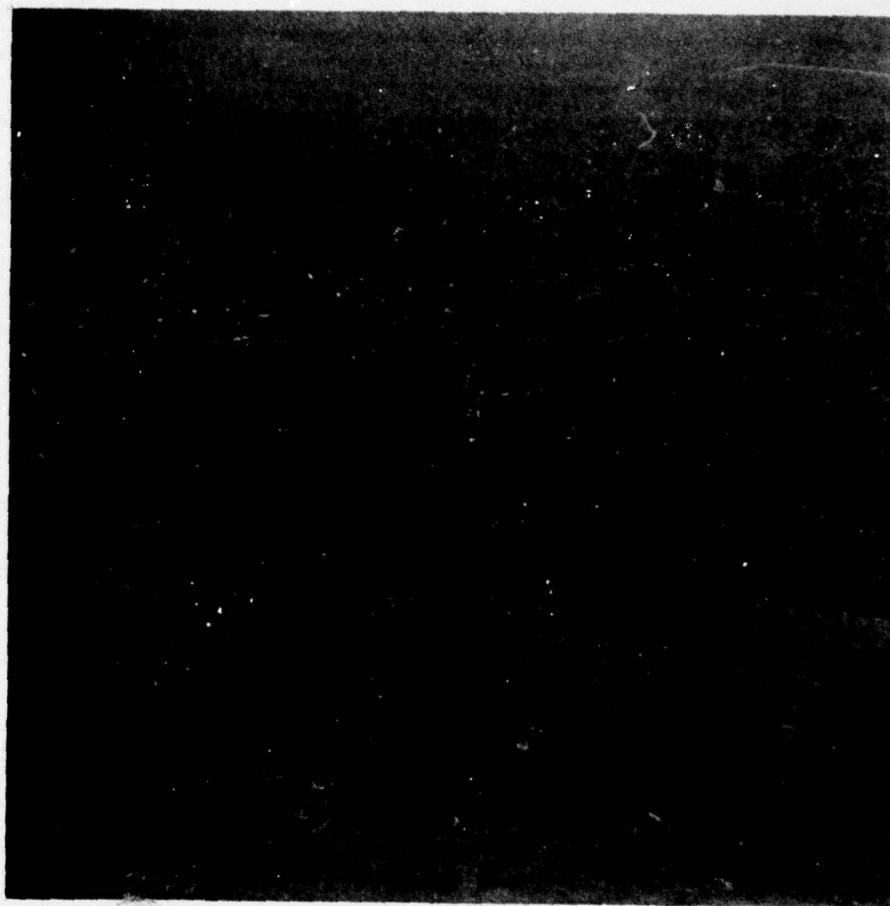


Ruptured plating covering #2 elevator shaft, looking aft on
starboard side. ABCR Photo No. 6016-4. END.

- 88 -

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Athwartship bend in flight deck near deck house. ABCR Photo
No. 6017-2.

- 89 -

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DEFENSE ATOMIC SUPPORT AGENCY WASHING
BIKINI SCIENTIFIC RESURVEY. VOLUME II
DEC 47

N DC

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REPORT OF THE DIRECTOR --ETC(U)

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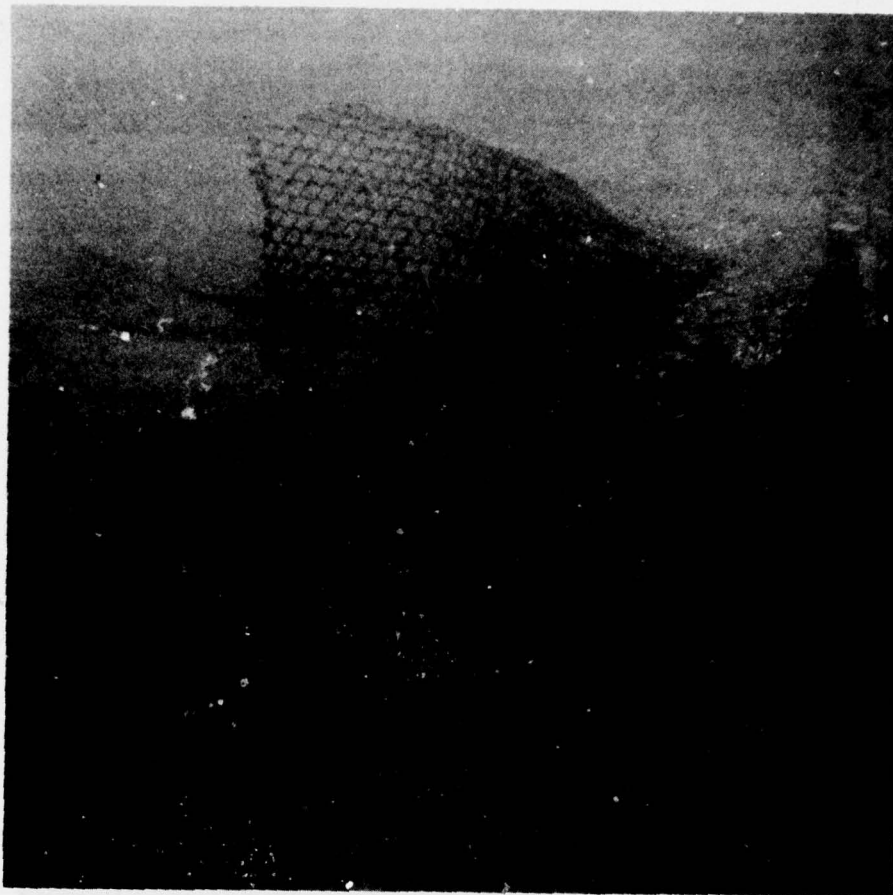
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Debris on flight deck. ABCR Photo No. 6017-3.

- 90 -

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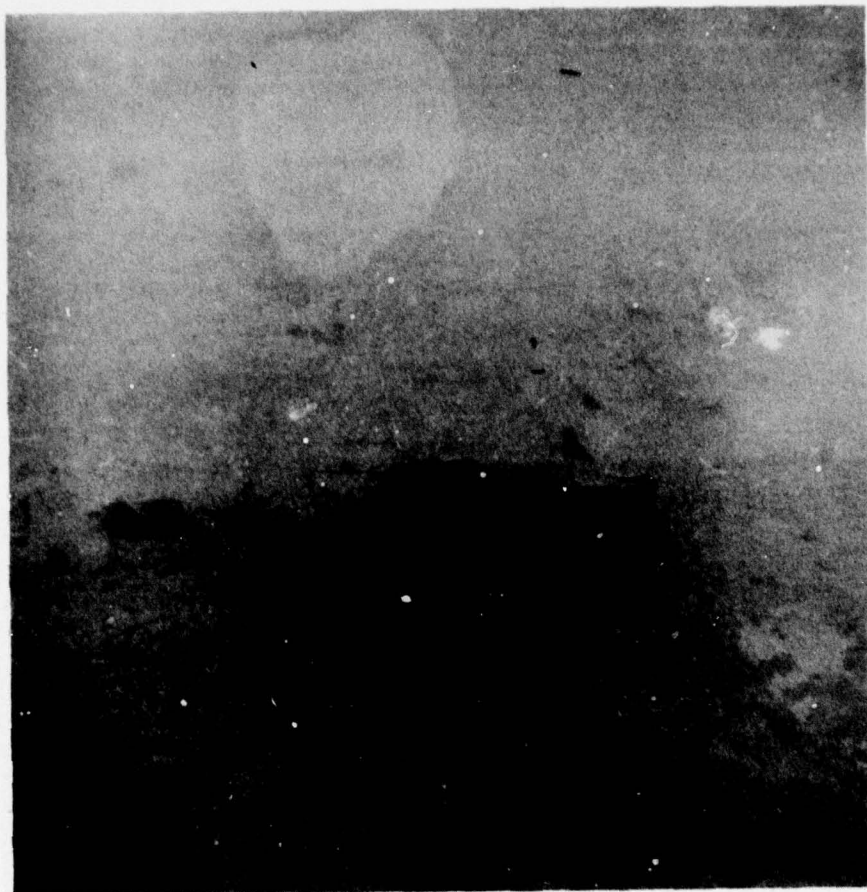
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Debris on flight deck. ABCR Photo No. 6017-4.

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Broken decking sloping inboard about frame 140. ABCR Photo No. 6017-5.

- 92 -

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Tire imprint left by vehicle torn loose by shock. Vehicle could not be found, yet all four wheel imprints were. ABCR Photo No. 6018-1. END.

- 93 -

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Looking aft on starboard side flight deck about frame 160.
ABCR Photo No. 6021-1.

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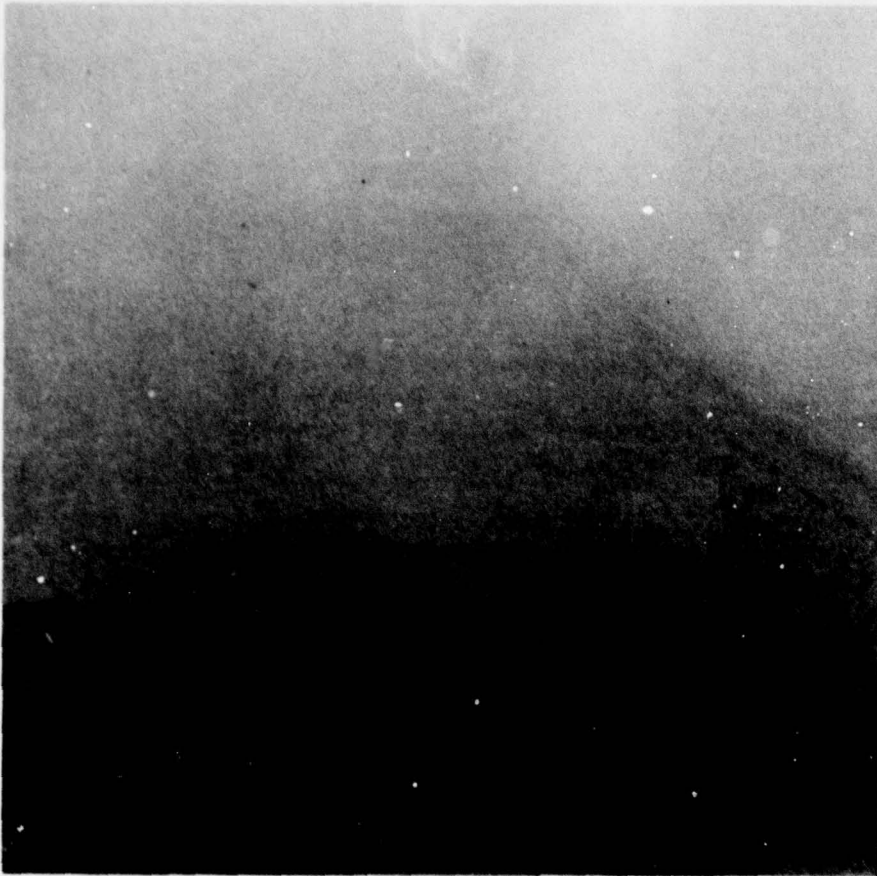


Looking aft on starboard side of flight deck about frame 162.
ABCR Photo No. 6021-2.

- 95 -

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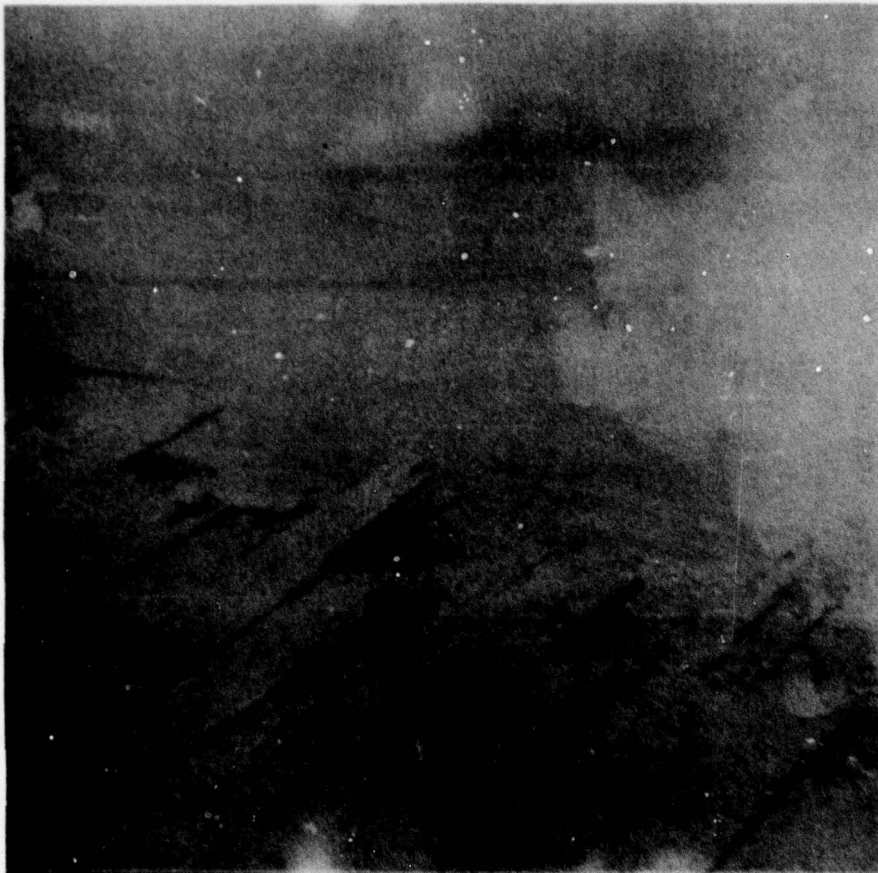


Dished in flight deck looking to starboard about frame 144.
ABCR Photo No. 6021-3.

- 96 -

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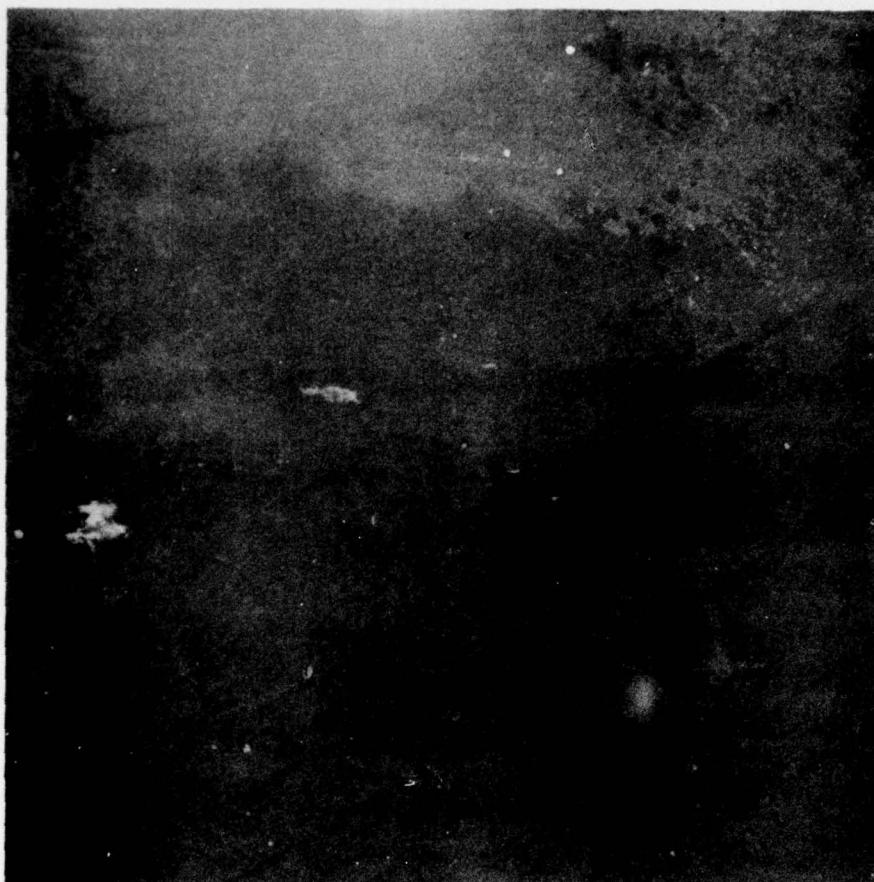


Dished in flight deck looking to starboard about frame 140.
ABCR Photo No. 6021-4. END.

- 97 -

UNCLASSIFIED

UNCLASSIFIED

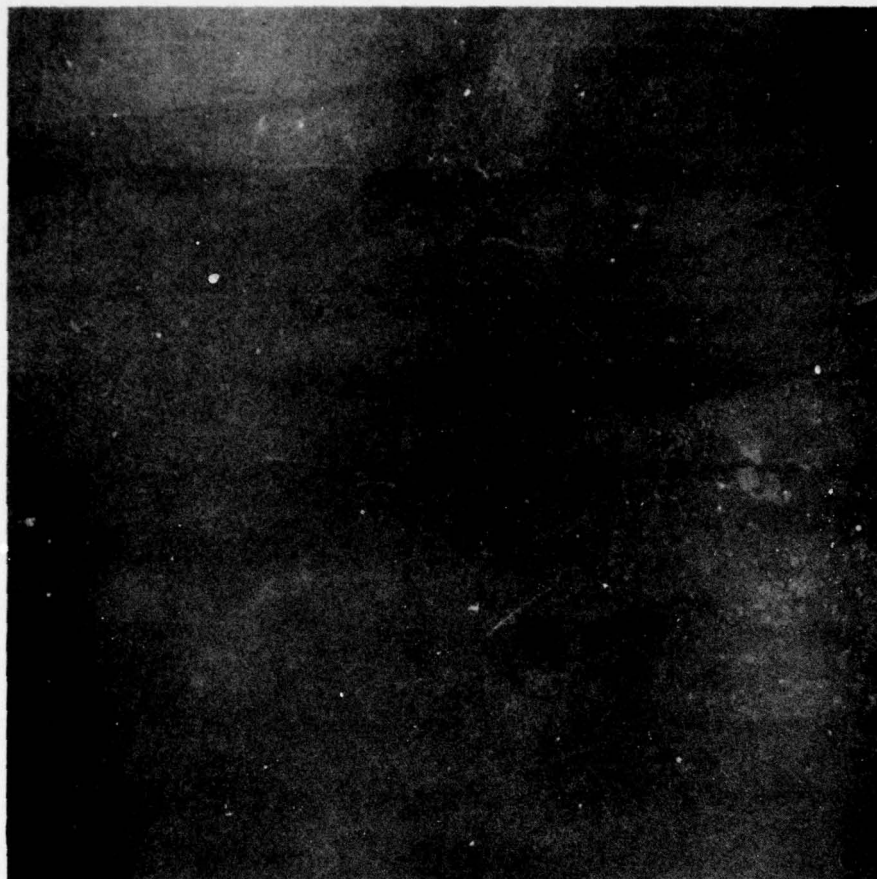


Damaged flight deck just aft of last 40mm. mount looking from
aft forward. ABCR Photo No. 6023-2.

- 98 -

UNCLASSIFIED

UNCLASSIFIED



Damaged flight deck just aft of last 40mm mount looking from
aft forward. Note bump over transverse girder 190. ABCR
Photo No. 6023-3.

- 99 -

UNCLASSIFIED

UNCLASSIFIED

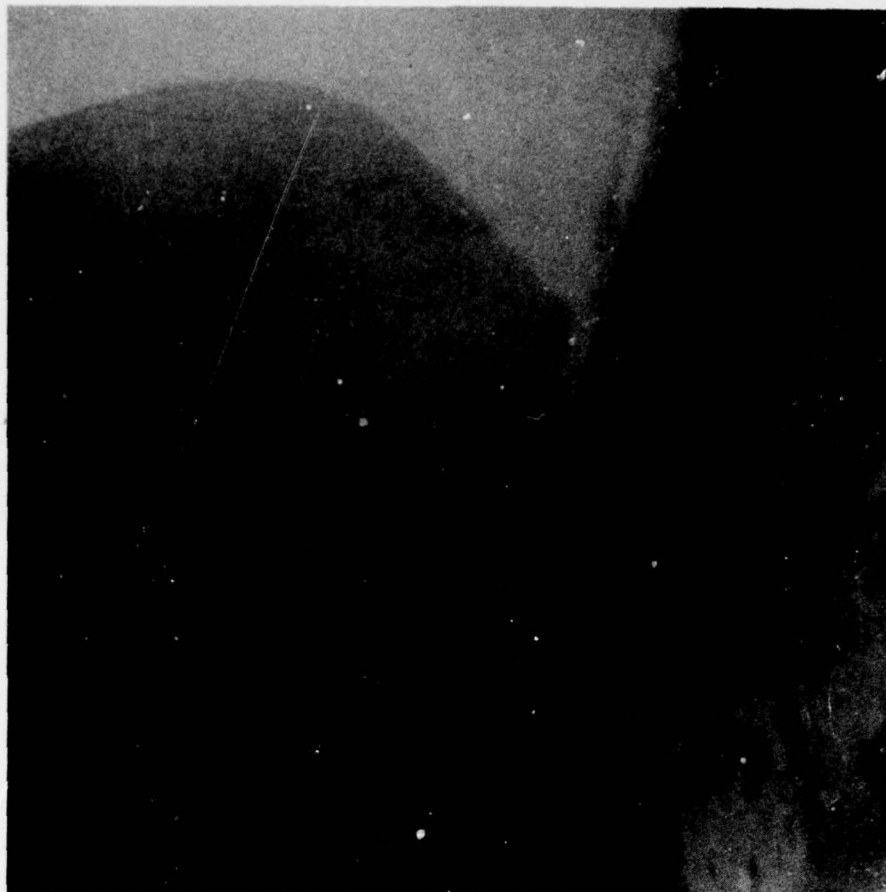


Unsatisfactory view of after deck damage. ABCR Photo No.
6023-4. END.

- 100 -

UNCLASSIFIED

UNCLASSIFIED

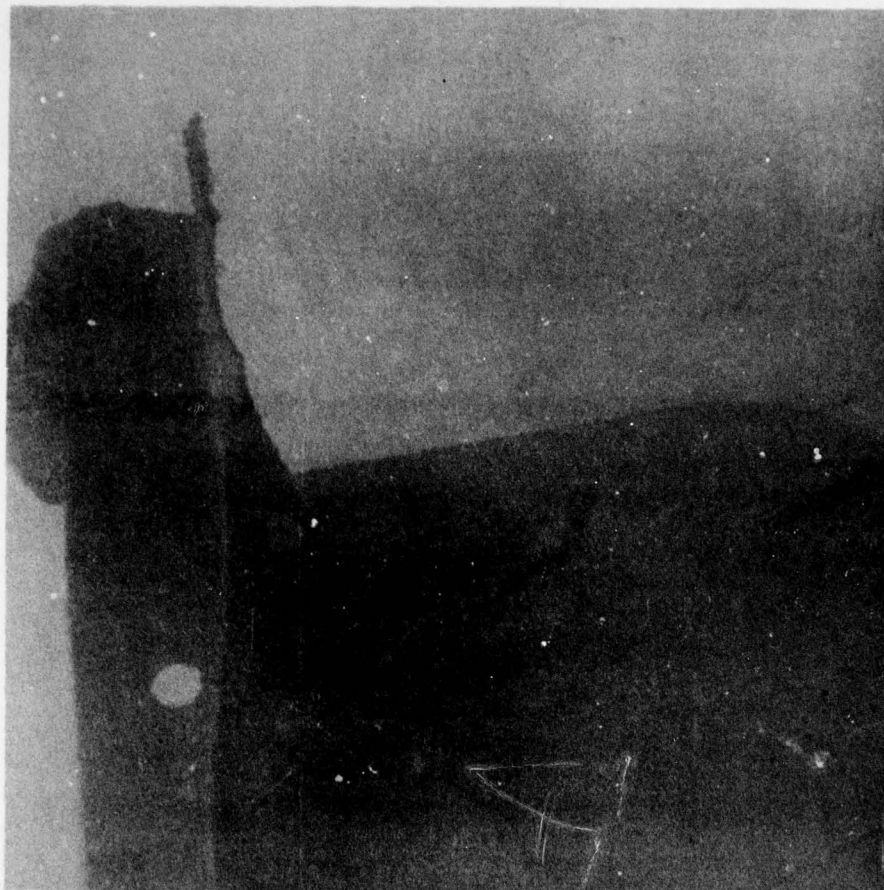


40mm.director starboard side stack. ABCR Photo No. 6024-1.

- 101 -

UNCLASSIFIED

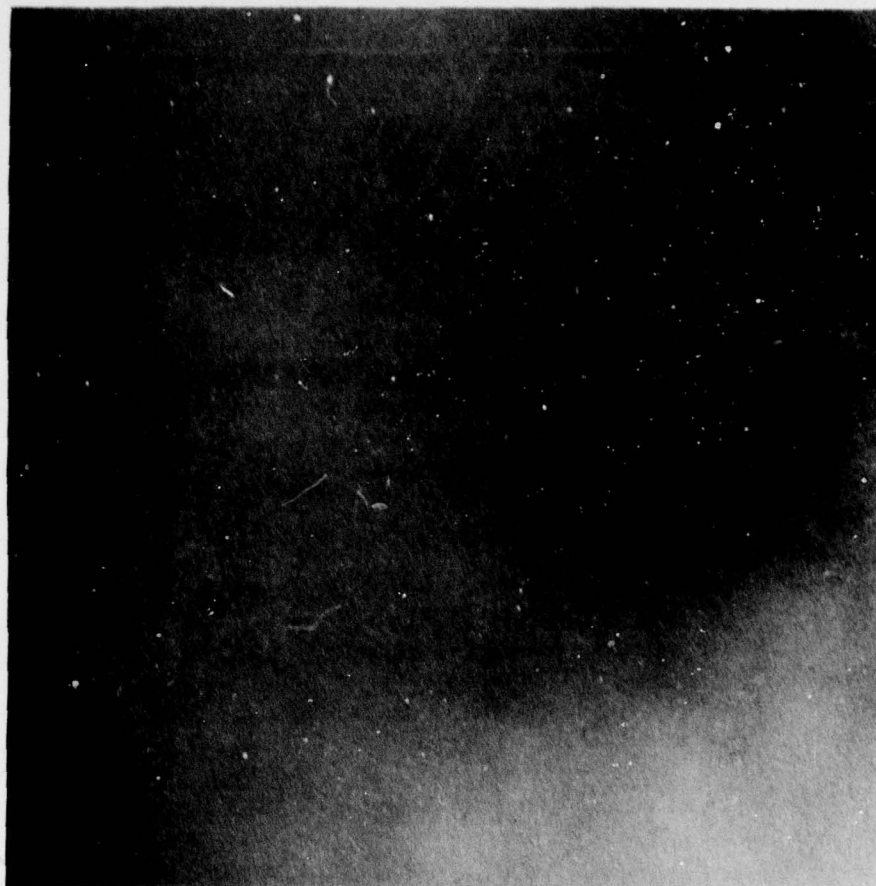
UNCLASSIFIED



40mm. director starboard side stack, different angle. ABCR
Photo No. 6024-2.

UNCLASSIFIED

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Starboard side uptakes coming through deck. ABCR Photo No.
6024-3.

- 103 -

UNCLASSIFIED

UNCLASSIFIED

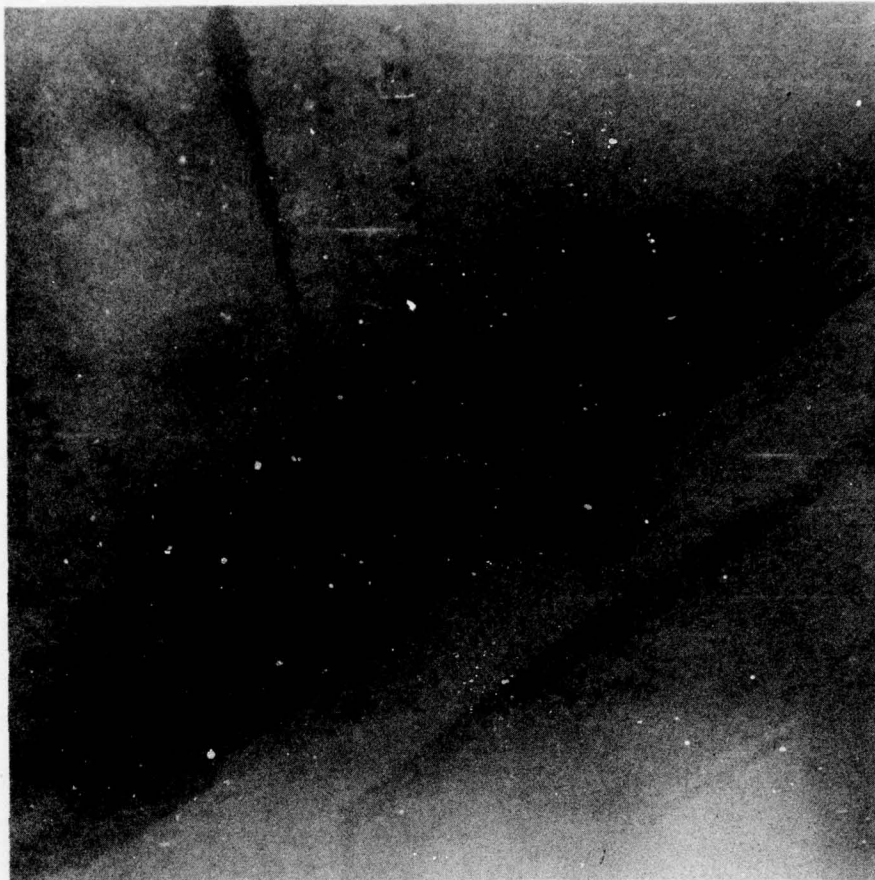


View of starboard side of uptakes where stack is broken off
about frame 106. ABCR Photo No. 6024-7.

- 104 -

UNCLASSIFIED

UNCLASSIFIED



Crack in superstructure in or near uptakes. ABCR Photo No.
6024-11.

- 105 -

UNCLASSIFIED

UNCLASSIFIED

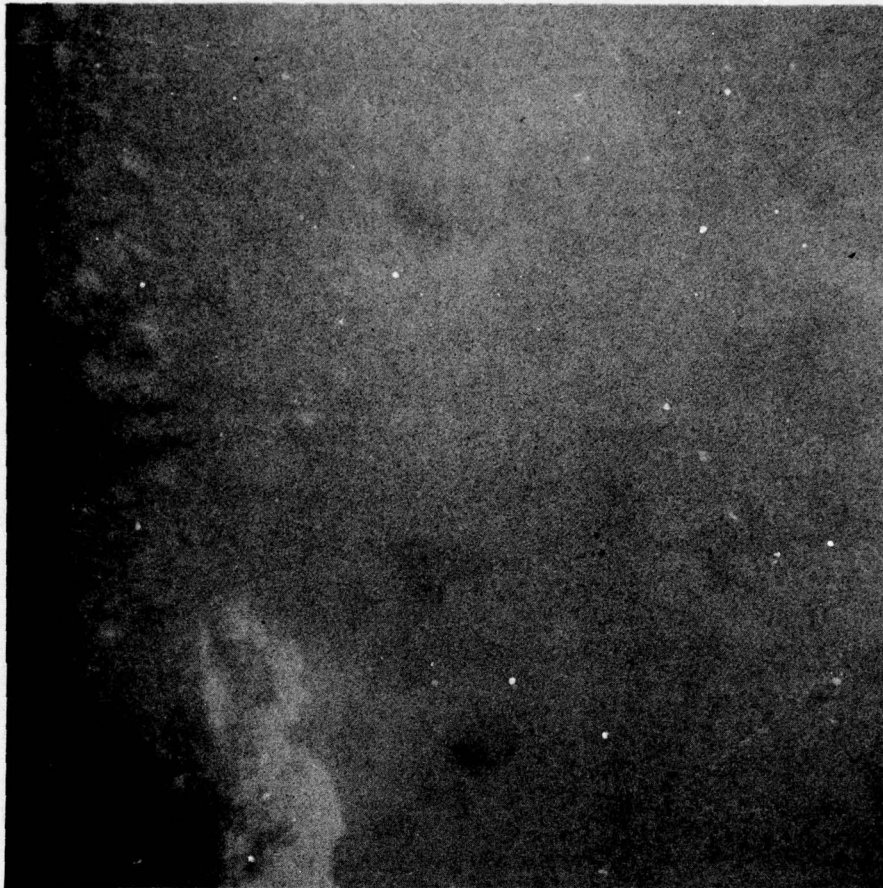


Gun barrel and debris around 40mm gun mount #13, frame 112
starboard. ABCR Photo No. 6025-2.

- 106 -

UNCLASSIFIED

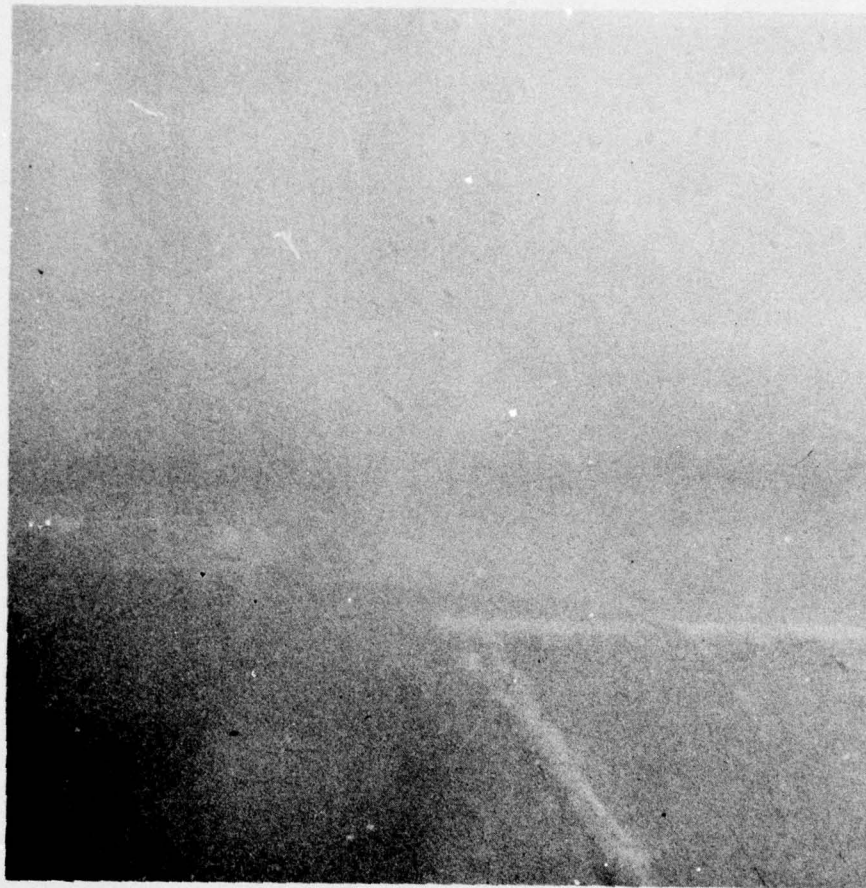
UNCLASSIFIED



Side of superstructure about frame 116, starboard side. ABCR
Photo No. 6025-4.

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40mm. mount #13. ABCR Photo No. 6025-6.

- 108 -

UNCLASSIFIED

UNCLASSIFIED

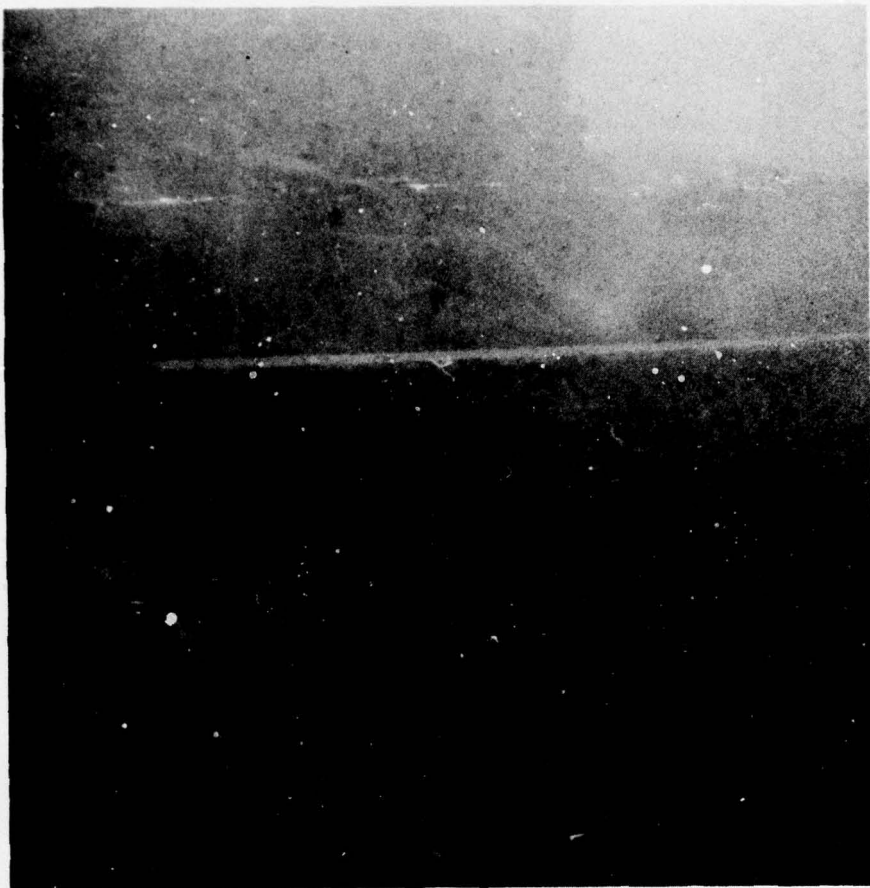


40mm.mount #13. ABCR Photo No. 6025-7.

- 109 -

UNCLASSIFIED

UNCLASSIFIED

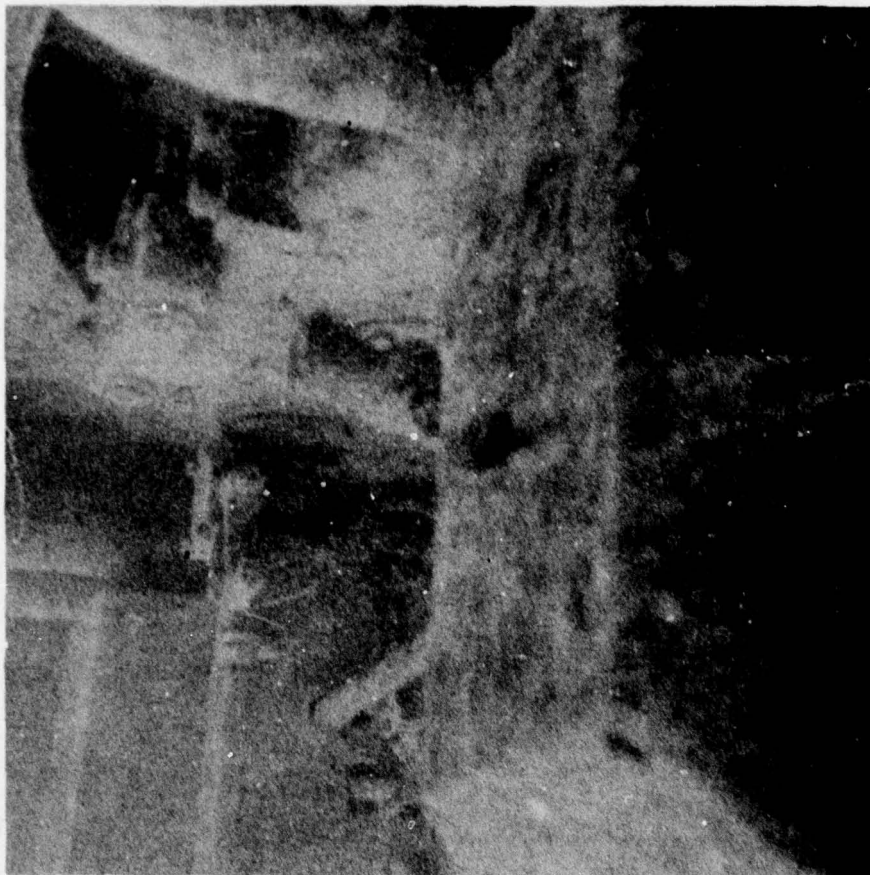


Tub around 40mm. mount #13. ABCR Photo No. 6025-8.

- 110 -

UNCLASSIFIED

UNCLASSIFIED

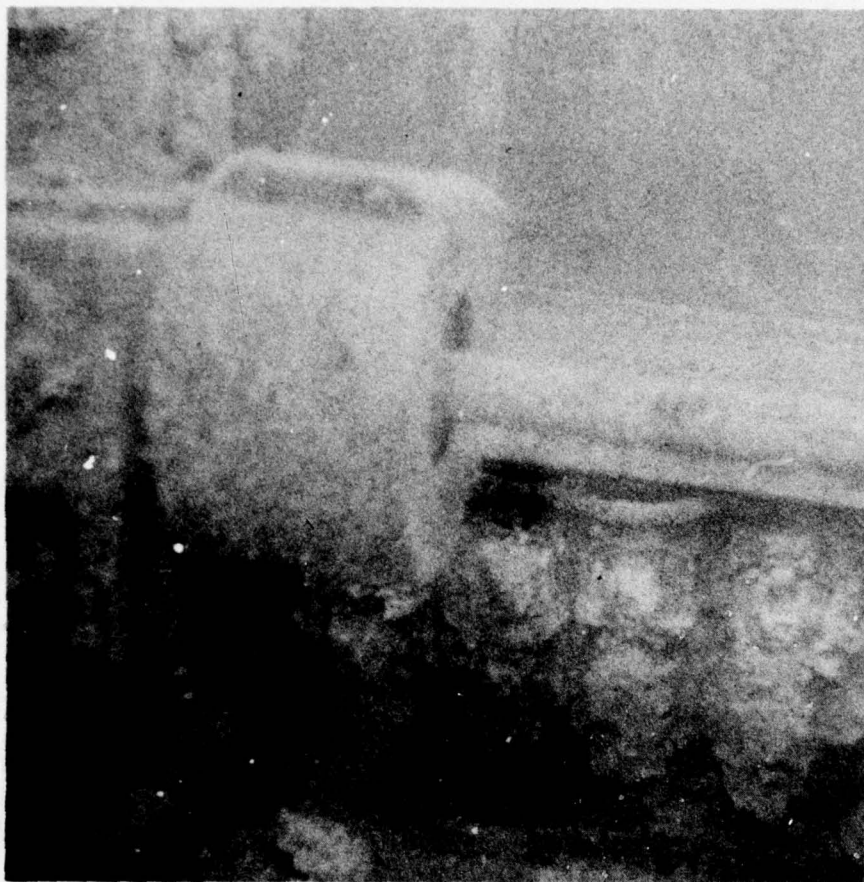


Unidentified section of #13-40mm. mount. ABCR Photo No. 6025-9.

- 111 -

UNCLASSIFIED

UNCLASSIFIED

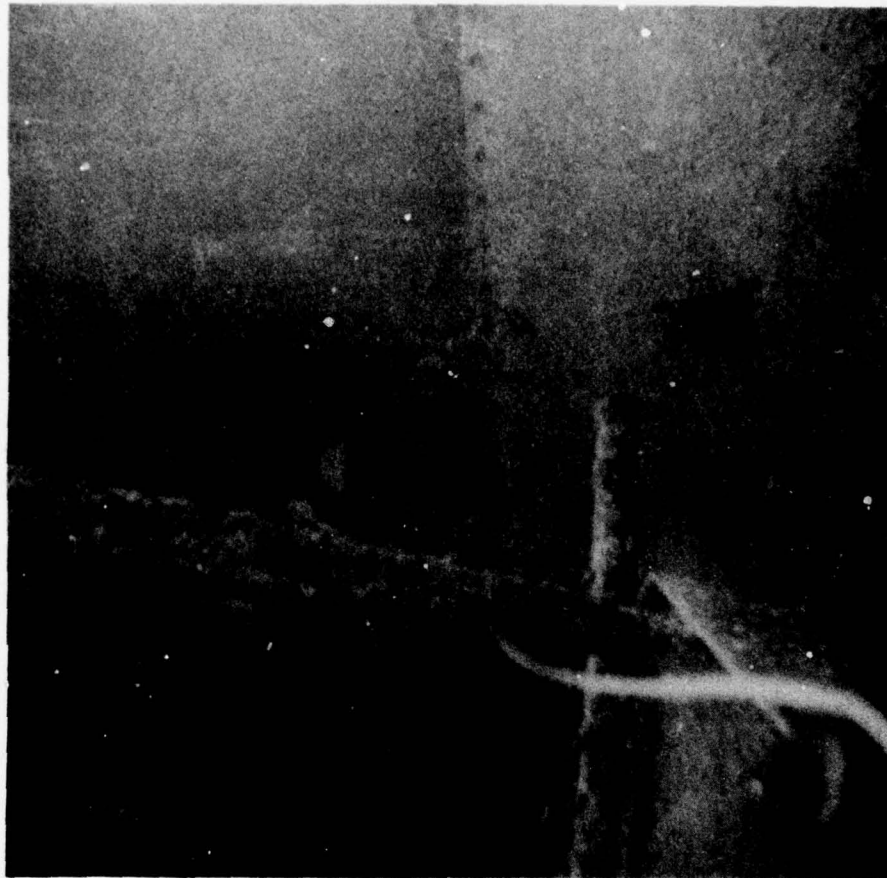


Unidentified section of #13-40mm. mount. ABCR Photo No. 6025-10.

- 112 -

UNCLASSIFIED

UNCLASSIFIED

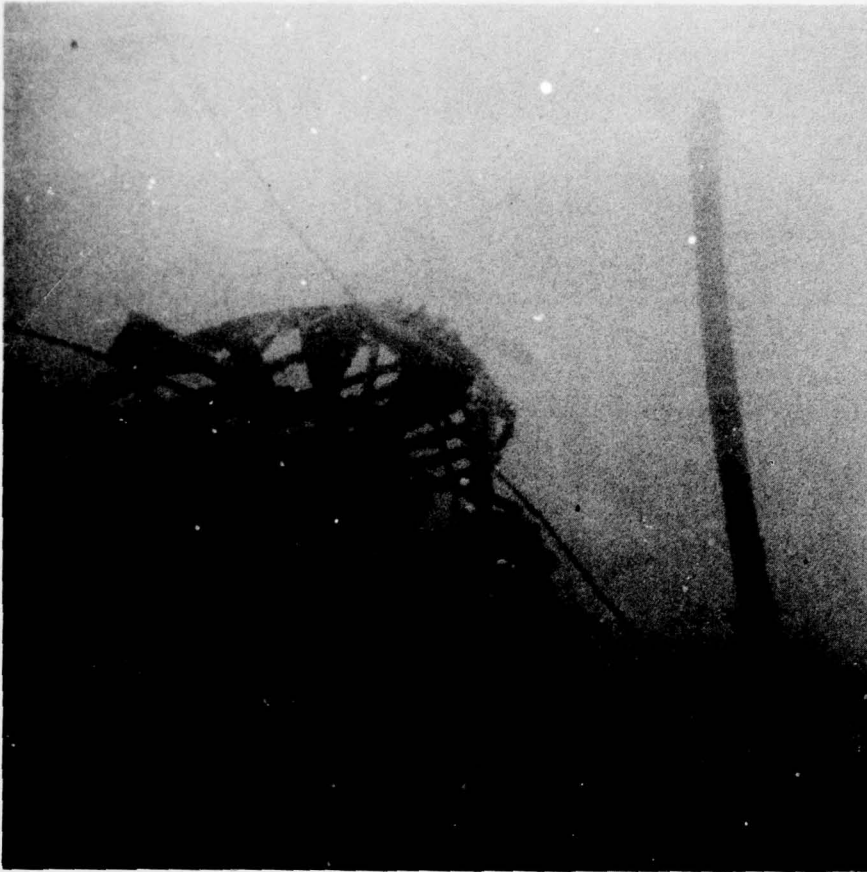


Frame 109, looking starboard to port, large hole in stack.
ABCR Photo No. 6025-11.

- 113 -

UNCLASSIFIED

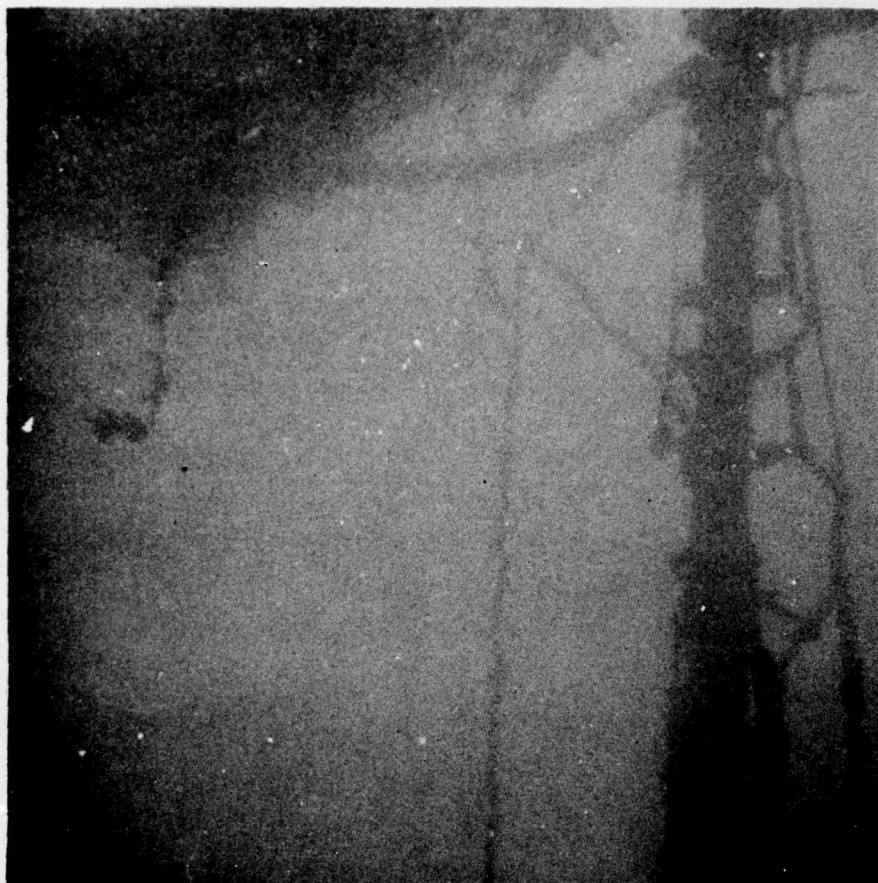
UNCLASSIFIED



Unidentified picture of debris on flight deck. ABCR Photo No. 6025-18.

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Wreckage hanging down from catwalk, after part of bridge.
ABCR Photo No. 6025-19. END.

- 115 -

UNCLASSIFIED

UNCLASSIFIED

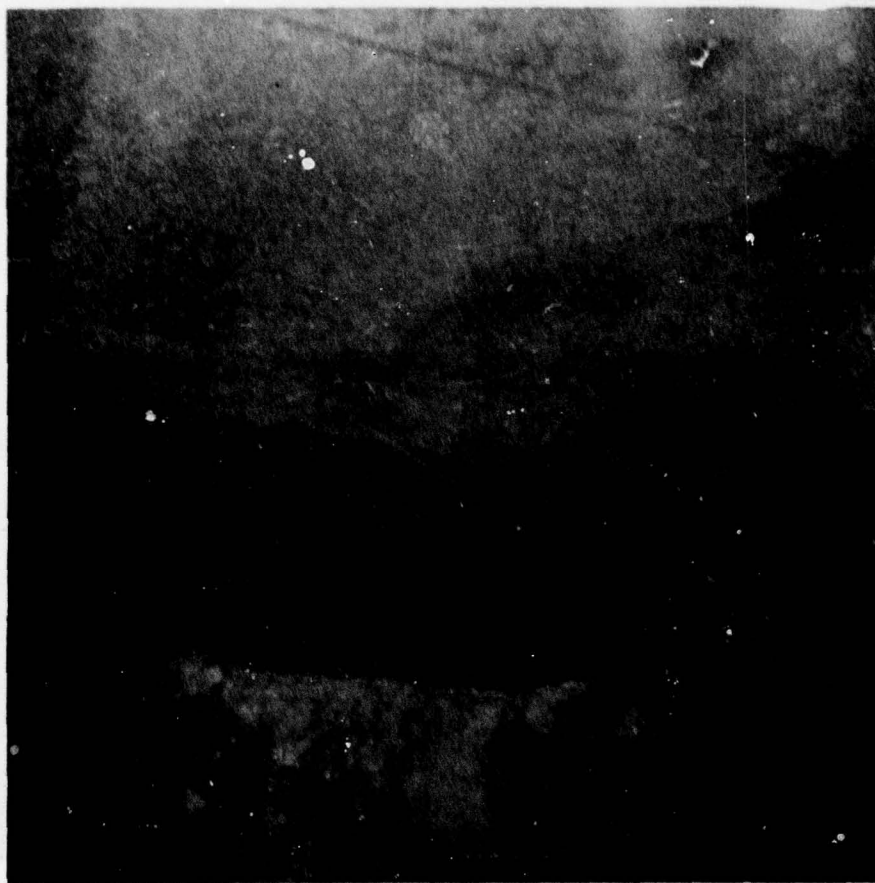


Stack where it is broken from base showing uptake #3 or 4.
ABCR 6026-1.

- 116 -

UNCLASSIFIED

UNCLASSIFIED

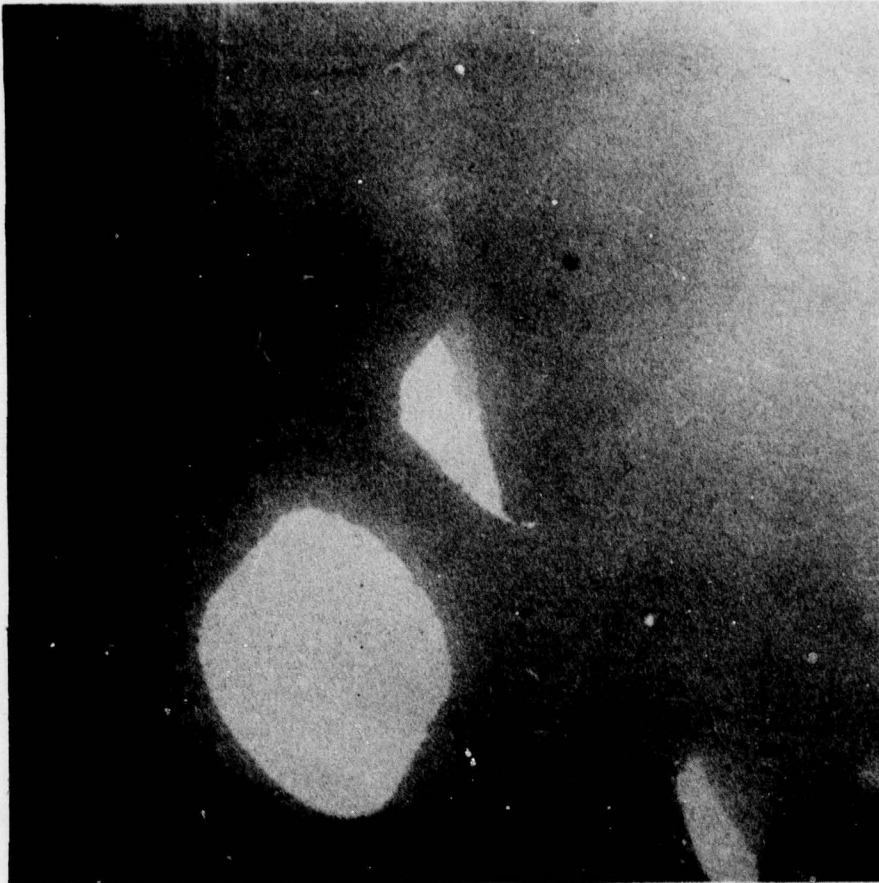


Stack where it is broken from base showing uptake #3 or 4.
ABCR Photo No. 6026-2.

- 117 -

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Section near base of broken stack, about frame 110, starboard side of flight deck. ABCR Photo No. 6026-3.

- 118 -

UNCLASSIFIED

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Rip in stack. ABCR Photo No. 6026-4.

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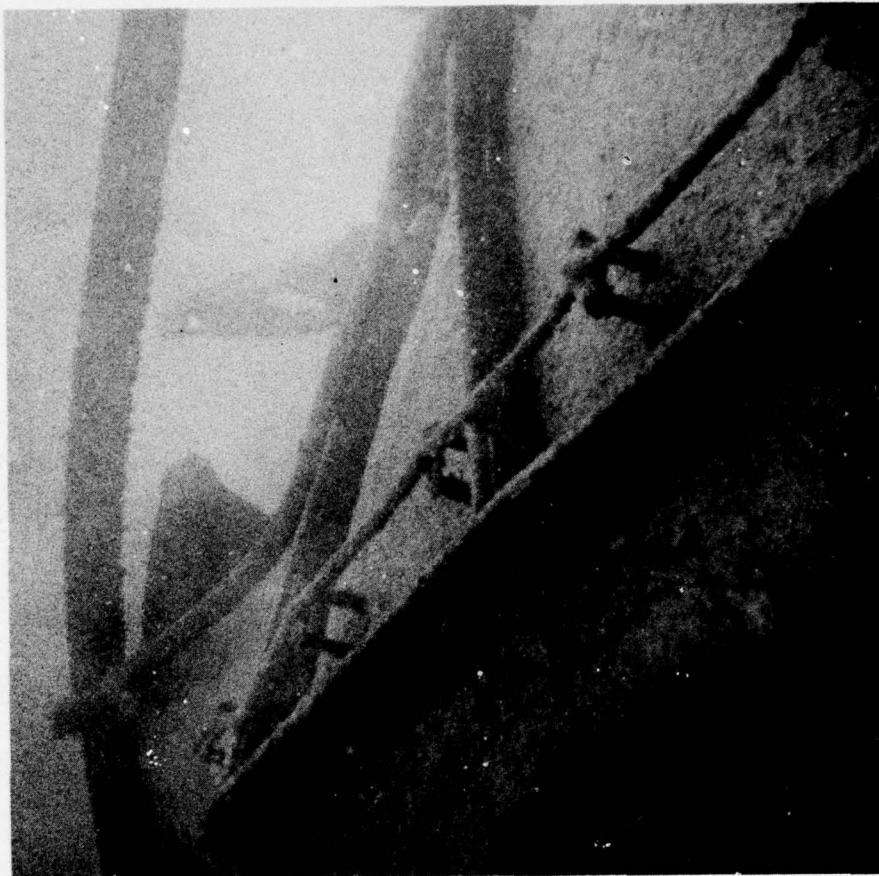


Water tight door sprung, aft of frame 125, starboard side of deck house. ABCR Photo No. 6026-5.

- 120 -

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Water tight door sprung, different angle, starboard side of deck house. ABCR Photo No. 6026-6.

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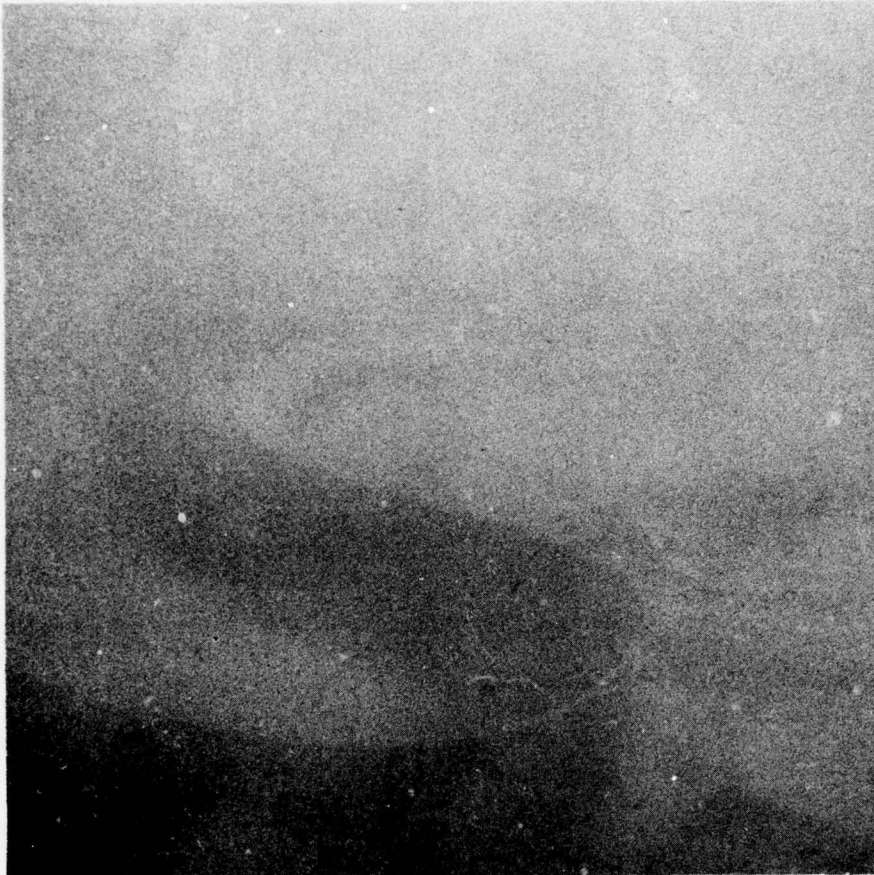


5" 38 Cal. gun ring showing gages used during test "A" and "B". ABCR Photo No. 6026-7.

- 122 -

UNCLASSIFIED

UNCLASSIFIED

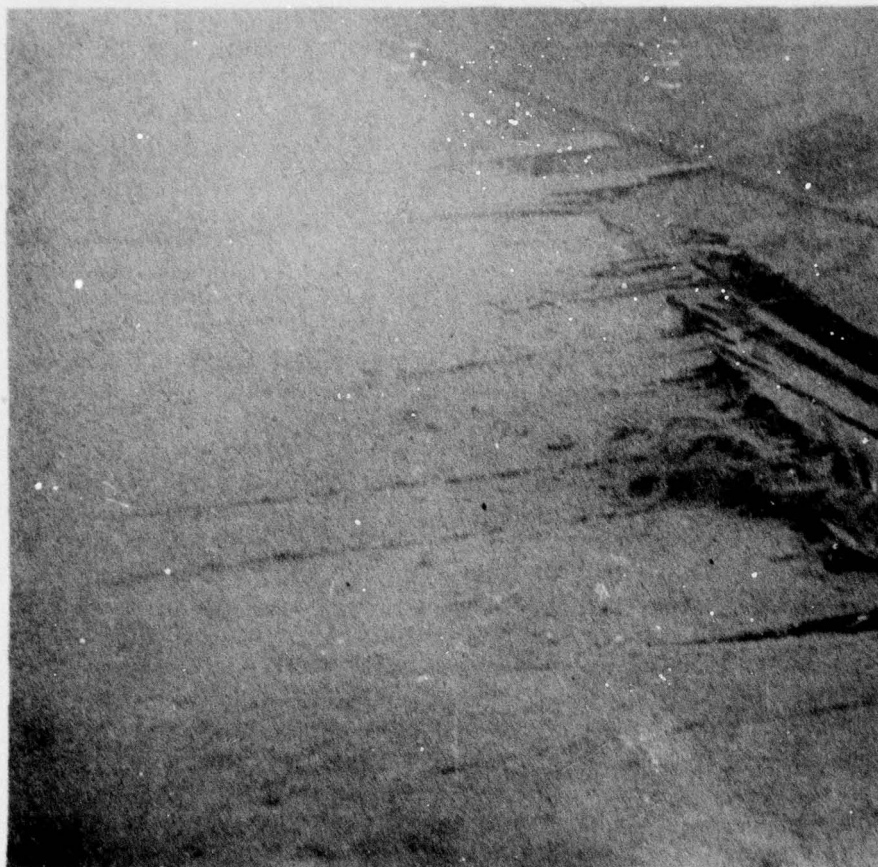


5" 38 Cal. gun ring showing gages used during test "A" and "B". ABCR Photo No. 6026-8.

- 123 -

UNCLASSIFIED

UNCLASSIFIED

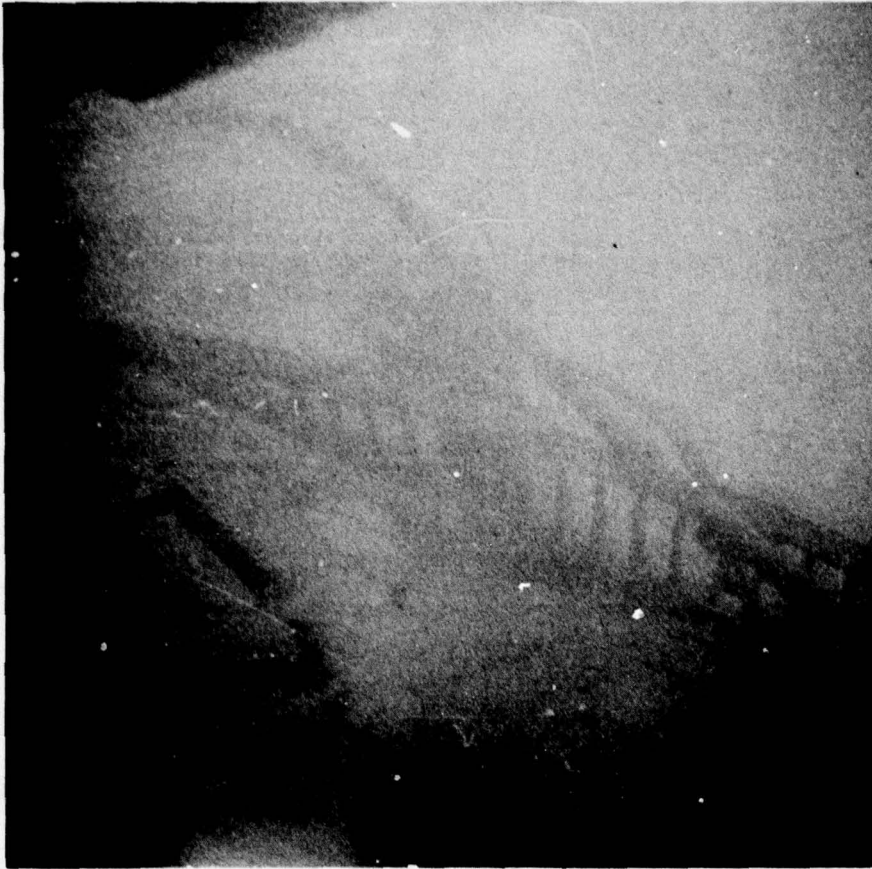


#1 of a series of photographs of damaged flight deck on port side looking forward, about frame 182. ABCR Photo No. 6027-3.

- 124 -

UNCLASSIFIED

UNCLASSIFIED

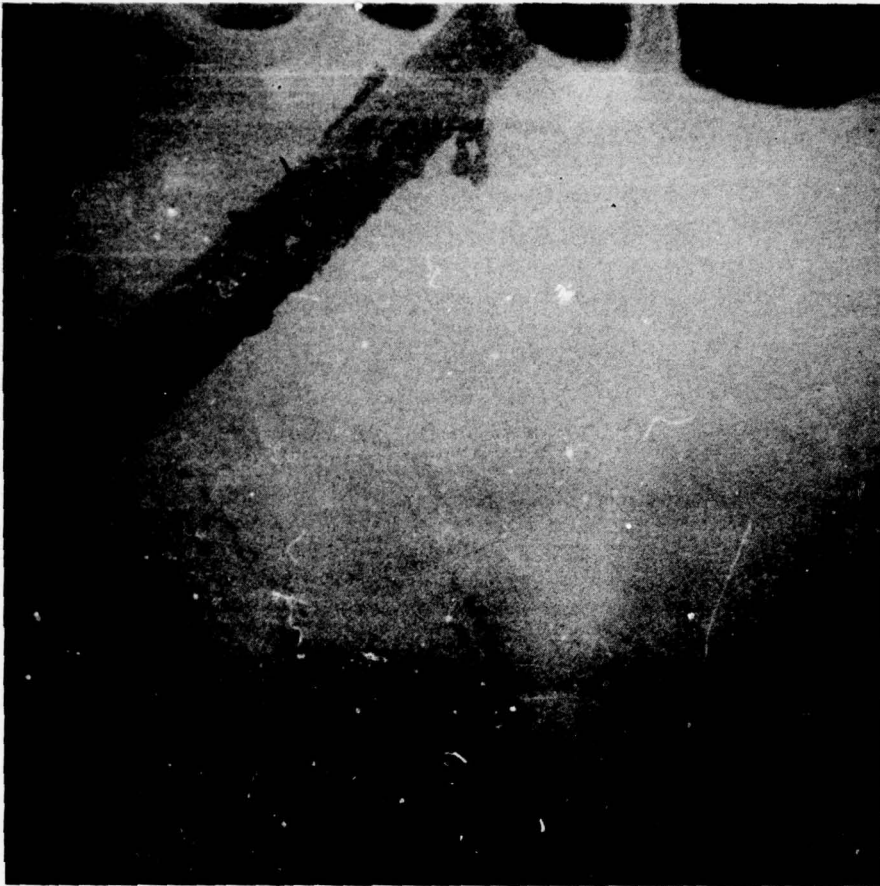


Wreckage found under starboard side of SARATOGA, aft of frame
77. ABCR Photo No. 6009-1.

- 125 -

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Wreckage found under starboard side of SARATOGA, aft of frame
77. ABCR 6009-2. END.

- 126 -

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Shot of rudder and stern post from starboard looking up.
ABCR Photo No. 6027-2.

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Shot of rudder and stern post from starboard looking up.
ABCR Photo No. 6027-1.

- 128 -

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#1 stern tube showing crack. ABCR Photo No. 6028-1.

- 129 -

UNCLASSIFIED

UNCLASSIFIED

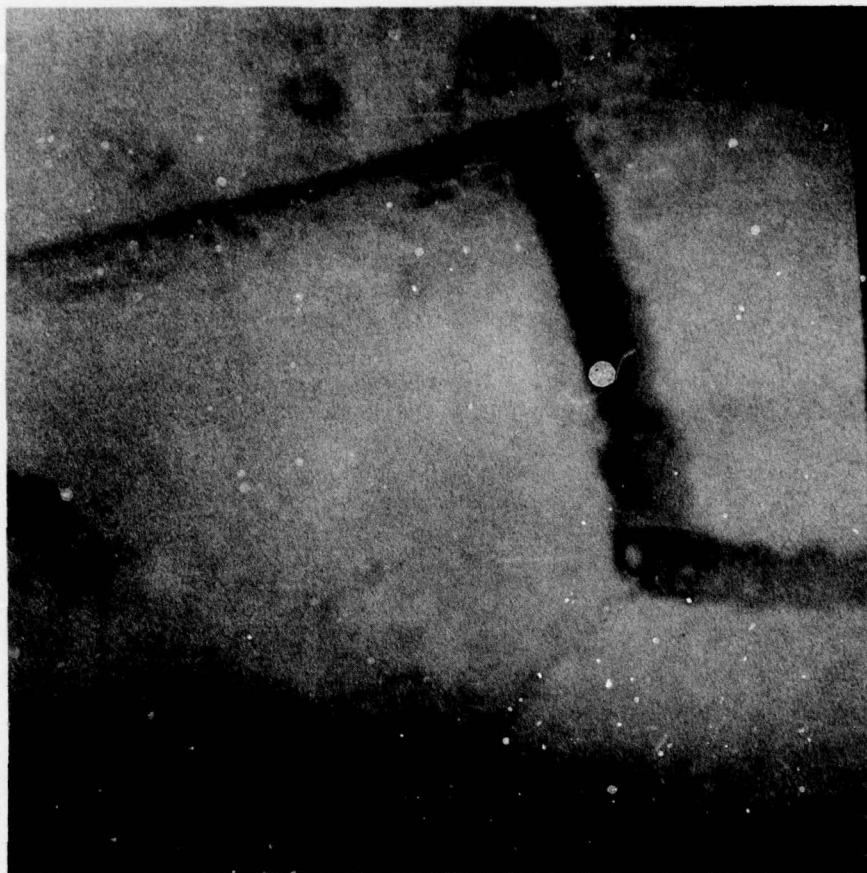


#1 stern tube showing crack. ABCR Photo No. 6028-2.

- 130 -

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#1 stern tube showing end of crack. ABCR Photo No. 6028-3.
END.

UNCLASSIFIED

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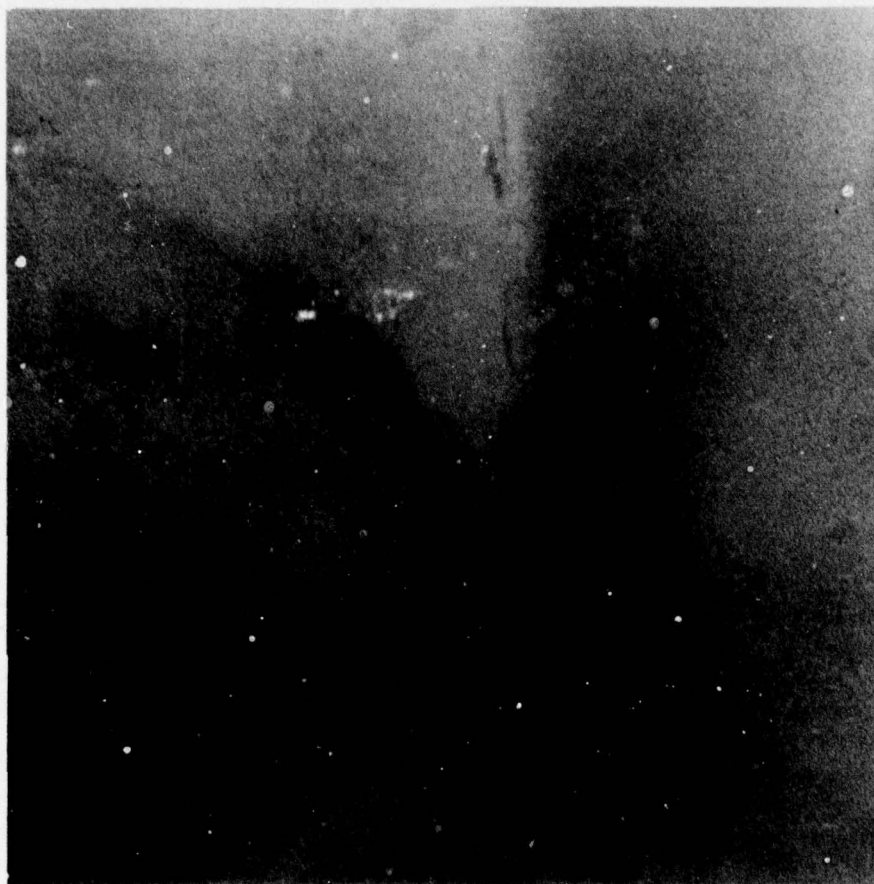


View of bent and ruptured blister looking aft, about frame
128. ABCR Photo No. 6022-7. END.

- 132 -

UNCLASSIFIED

UNCLASSIFIED

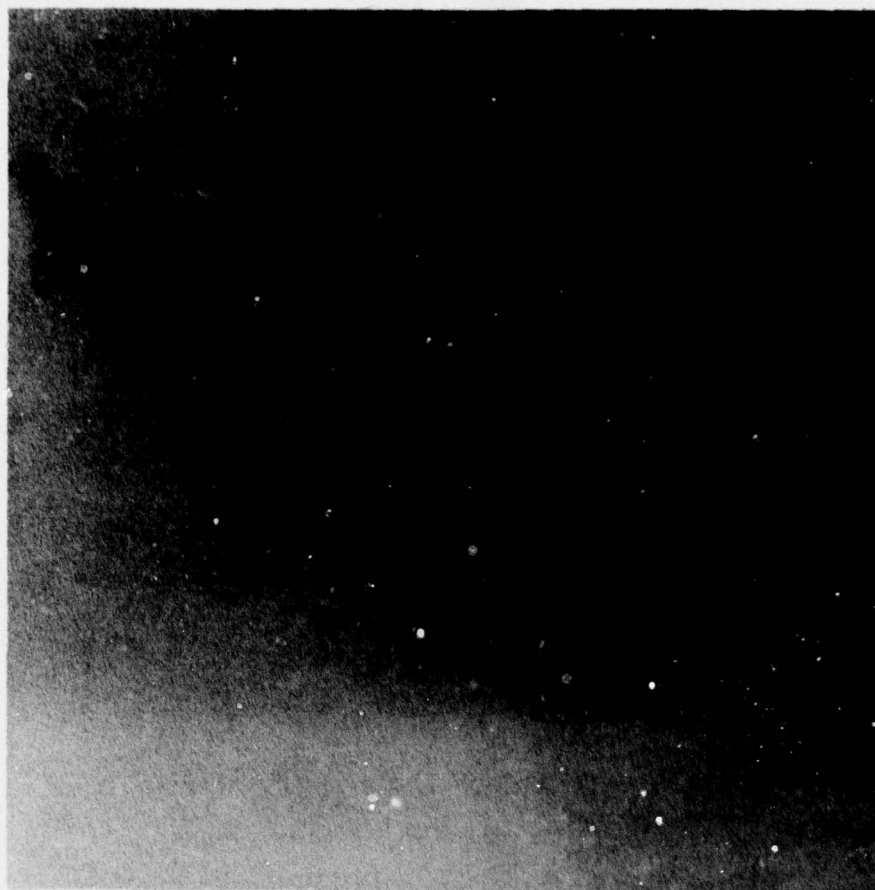


View of blister about frame 120 looking forward. ABCR Photo
No. 6024-12.

- 133 -

UNCLASSIFIED

UNCLASSIFIED

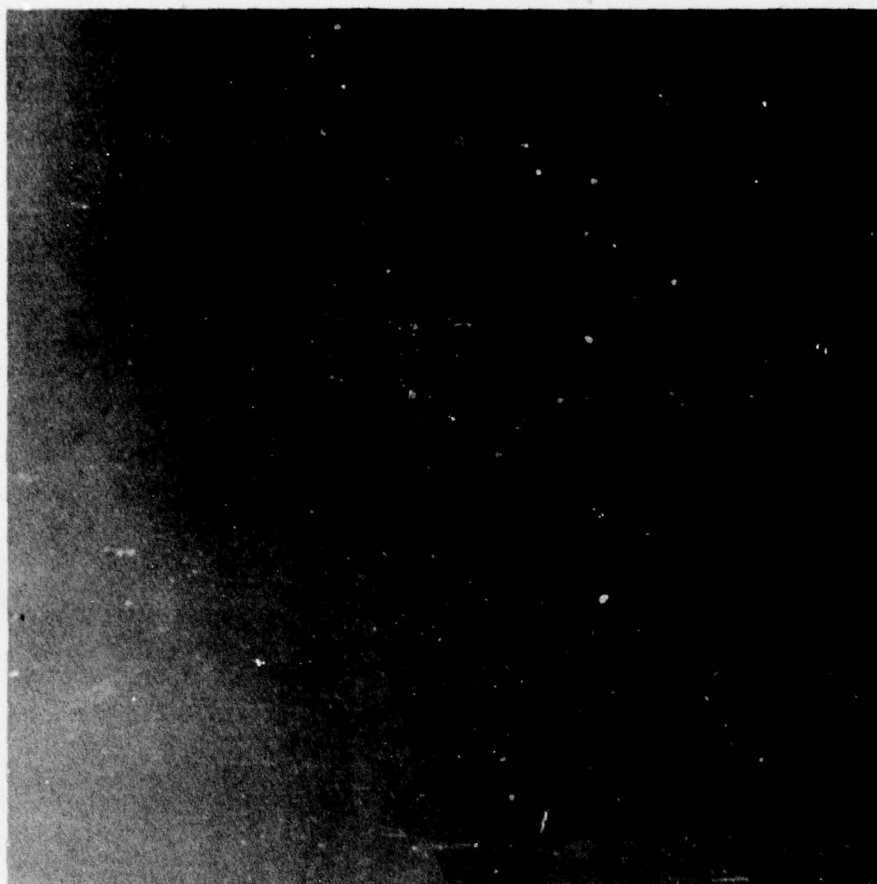


Looking aft on blister, about frame 128. ABCR Photo No.
6024-13.

- 134 -

UNCLASSIFIED

UNCLASSIFIED

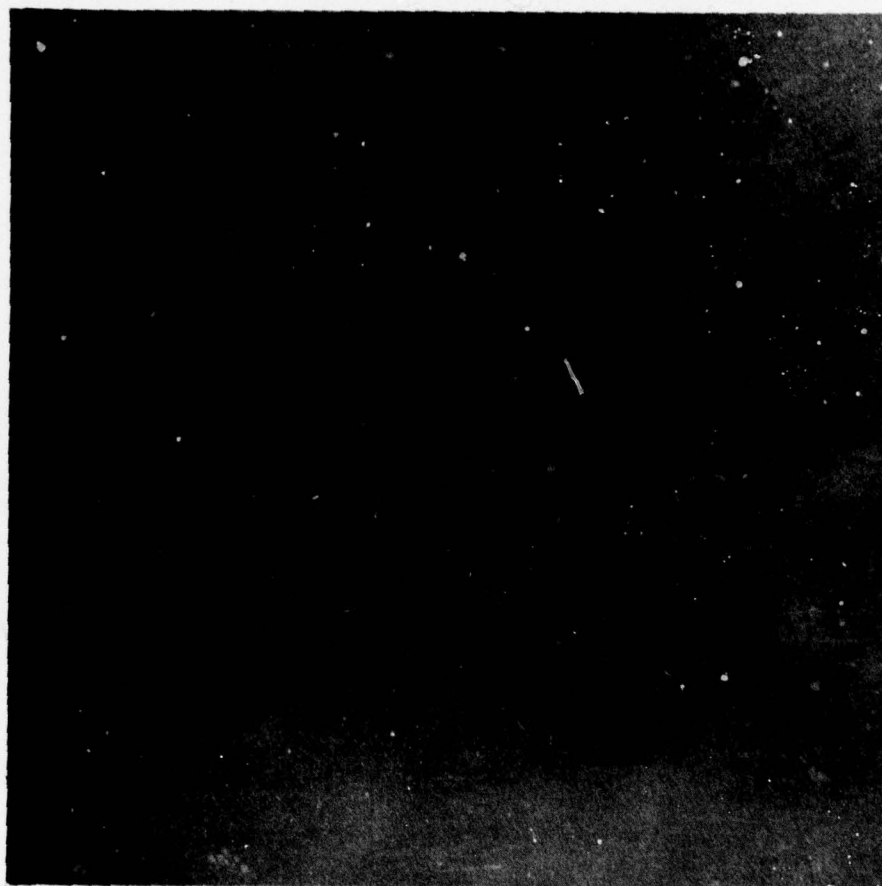


Looking aft on blister about frame 130. ABCR Photo No. 6024-14.

- 135 -

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Looking aft on blister, unidentified section but near frame
130. ABCR Photo No. 6024-15.

- 136 -

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Looking aft on blister, unidentified section but near frame
130. ABCR Photo No. 6024-16. END.

- 137 -

UNCLASSIFIED

UNCLASSIFIED

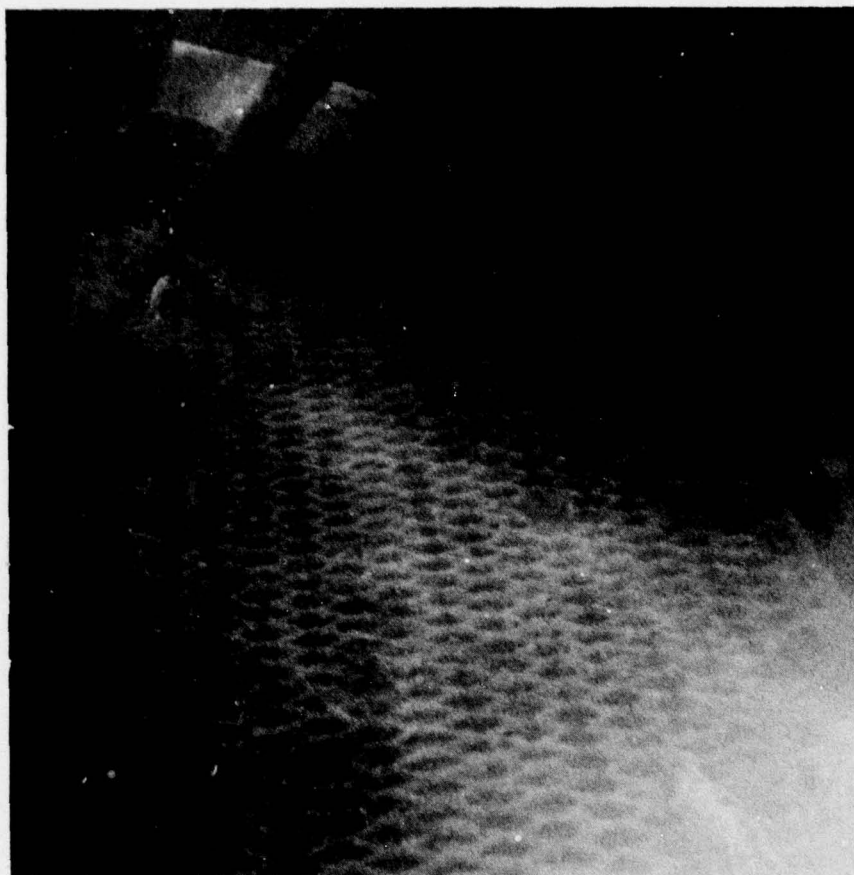


Picture of bulge in hull, frame 157, two feet below flight deck, starboard side. ABCR Photo No. 6032-4.

- 138 -

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Picture of bulge in hull, frame 157, two feet below flight deck, starboard side. ABCR Photo No. 6032-5.

- 139 -

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Sign over door, "MAA-111", compartment B-0209-L, starboard side, inside ship at frame 111. ABCR Photo No. 6032-6. END.

- 140 -

UNCLASSIFIED

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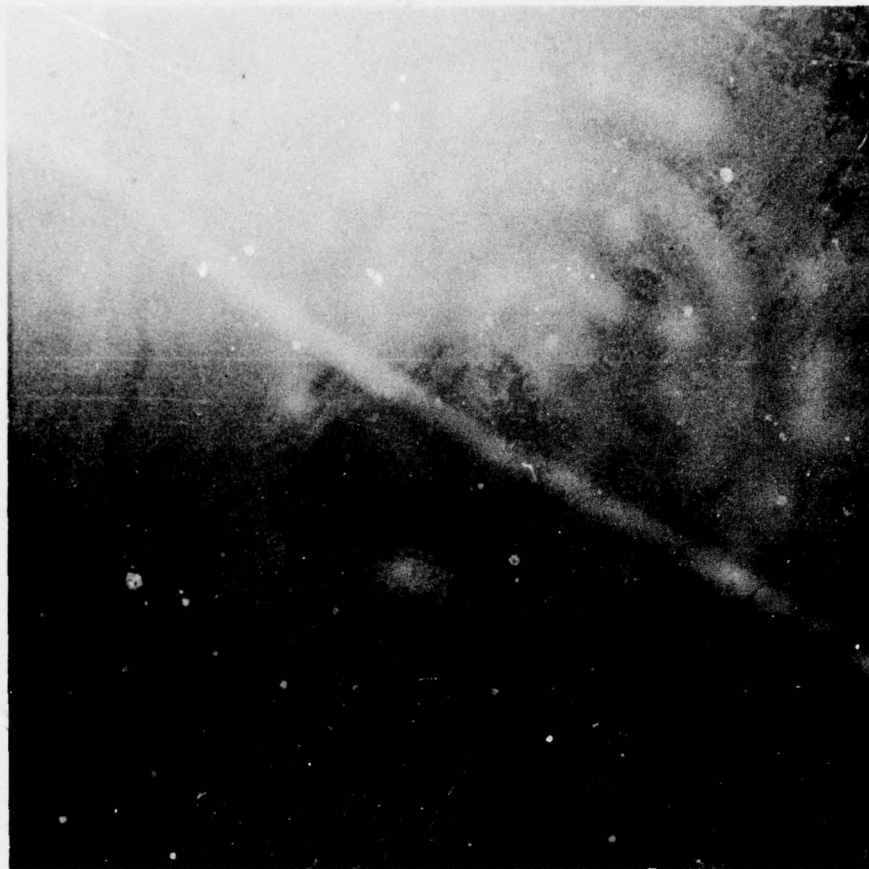


Looking aft on blister about frame 128. ABCR Photo No. 6022-1.

- 141 -

UNCLASSIFIED

UNCLASSIFIED

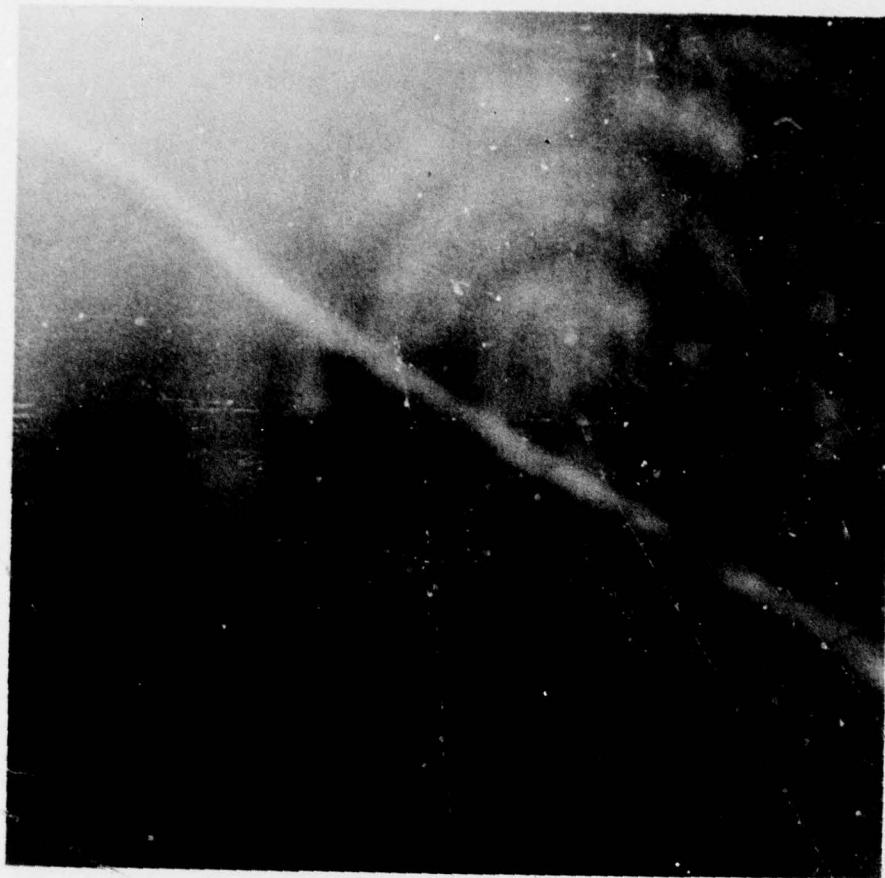


Blister broken loose from hull, looking forward about frame 122. ABCR 6022-2.

- 142 -

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Wreckage over the side by broken blister about frame 118.
ABCR Photo No. 6022-3.

- 143 -

UNCLASSIFIED

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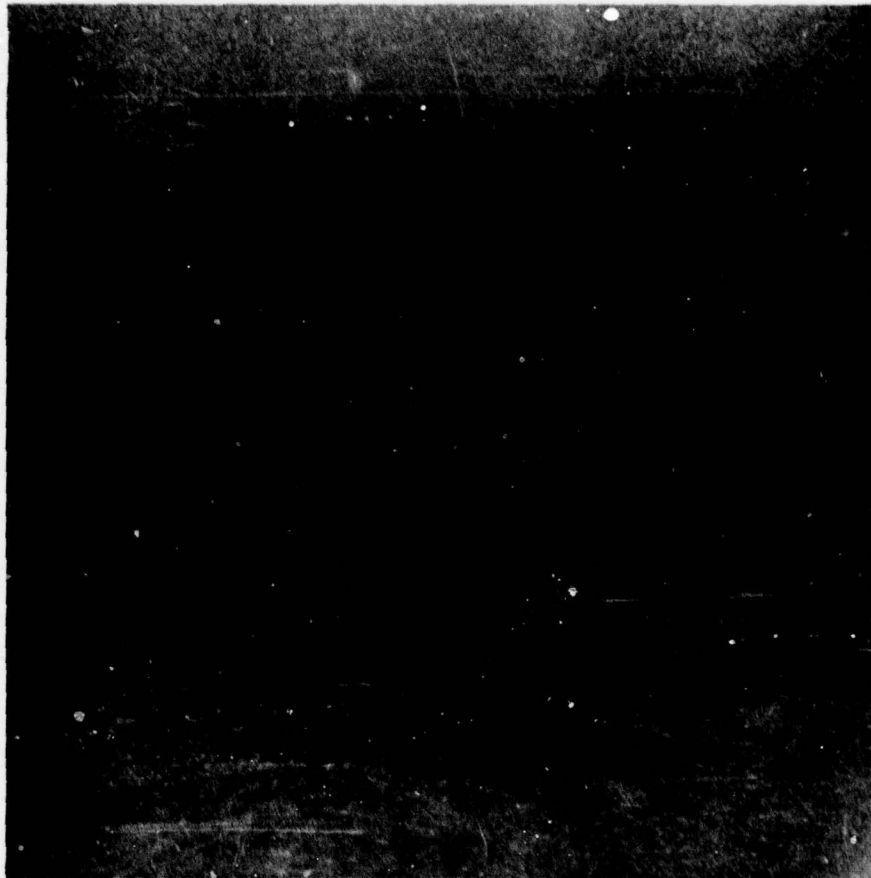


Broken blister looking forward about frame 114. ABCR Photo
No. 6022-5.

- 144 -

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Unsatisfactory view of blister. ABCR Photo No. 6022-6.

- 145 -

UNCLASSIFIED

UNCLASSIFIED

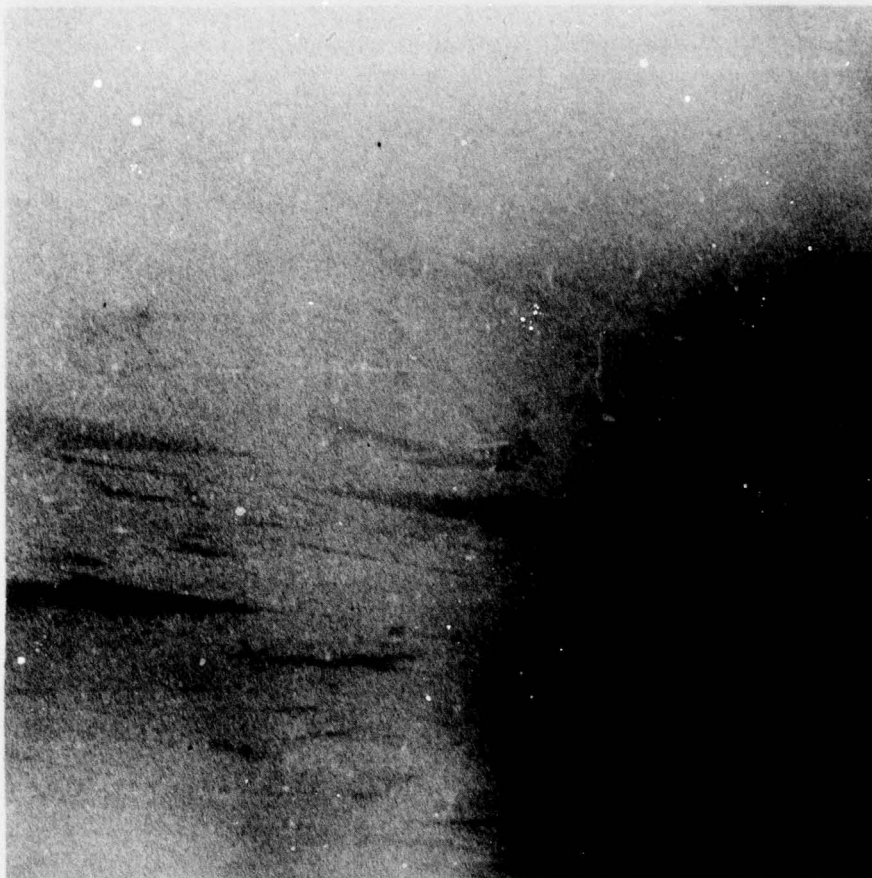


View of broken flight deck, port side looking forward, about
frame 136. ABCR Photo No. 6030-7.

- 146 -

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View of broken flight deck, port side looking forward, about
frame 140. ABCR Photo No. 6030-8.

- 147 -

UNCLASSIFIED

UNCLASSIFIED

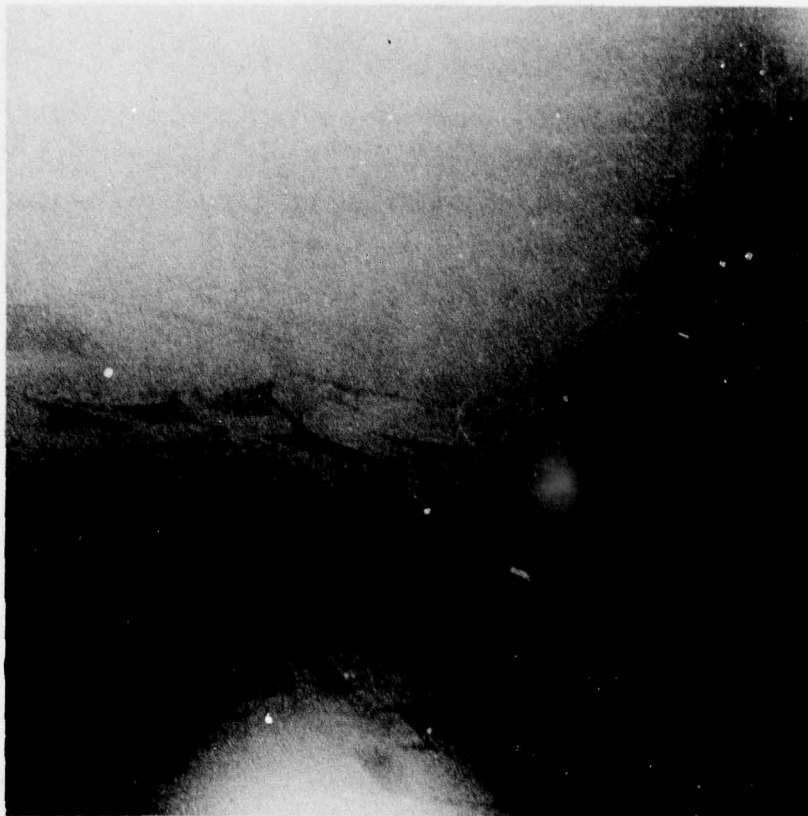


View of broken flight deck, port side looking forward, about frame 144. ABCR Photo No. 6030-9.

- 148 -

UNCLASSIFIED

[REDACTED]
UNCLASSIFIED



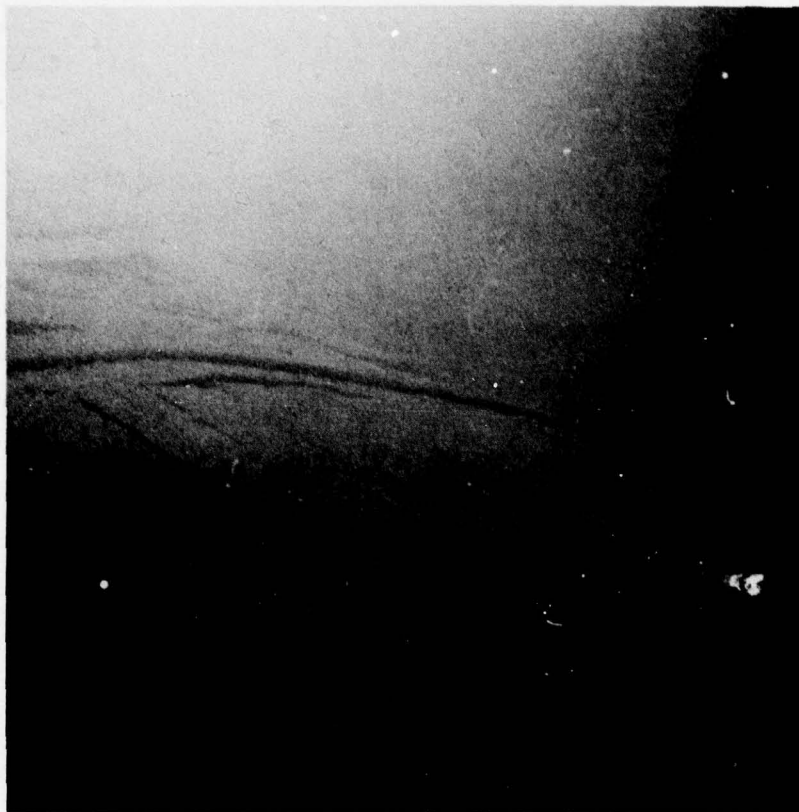
View of broken flight deck, port side looking forward, about
frame 150. ABCR Photo No. 6030-10.

- 149 -

[REDACTED]
UNCLASSIFIED

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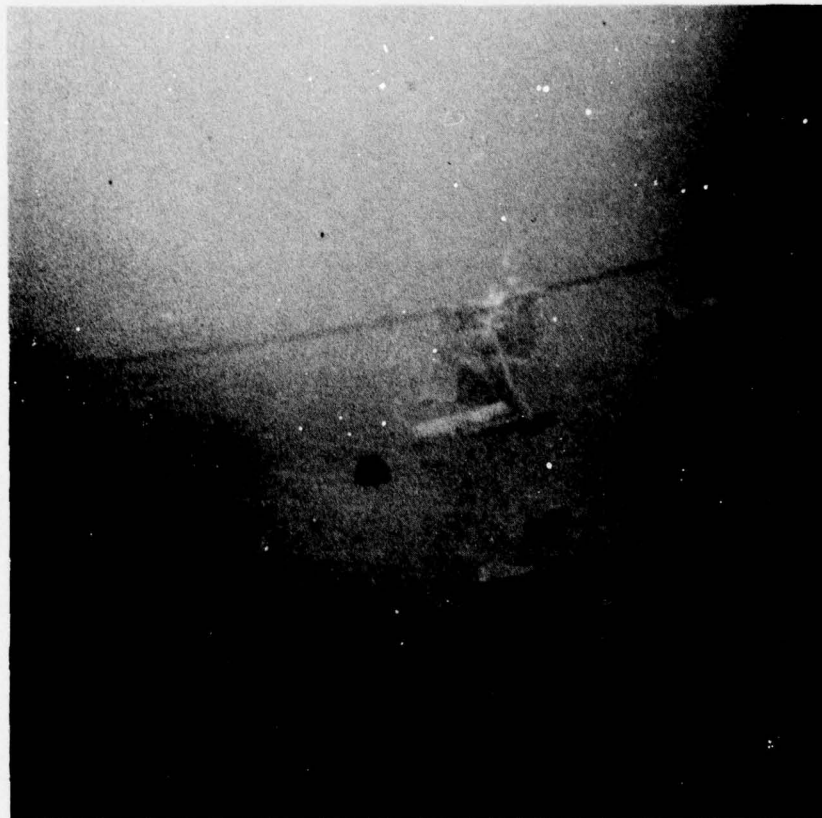
View of broken flight deck, port side looking diagonally forward, about frame 150. ABCR Photo No. 6030-11.

- 150 -

UNCLASSIFIED

UNCLASSIFIED

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Unidentified view near centerline, somewhere between frame
134 and 150. ABCR Photo No. 6030-13.

- 151 -

UNCLASSIFIED

UNCLASSIFIED

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Outboard bulkhead of 40mm. ready service locker, frame 151-150,
dished. ABCR Photo No. 6032-1.

- 152 -

UNCLASSIFIED

UNCLASSIFIED

UNCLASSIFIED

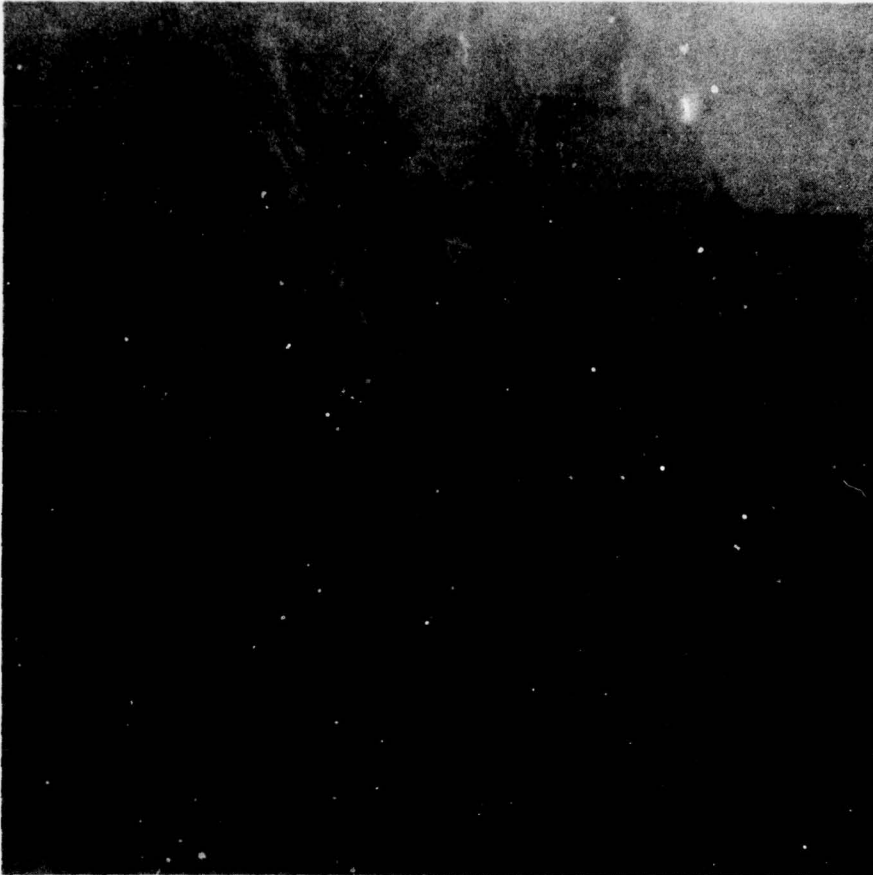


After end of 40mm. ready service locker, frame 152, bulkhead
dished. ABCR Photo No. 6032-2.

- 153 -

UNCLASSIFIED

UNCLASSIFIED

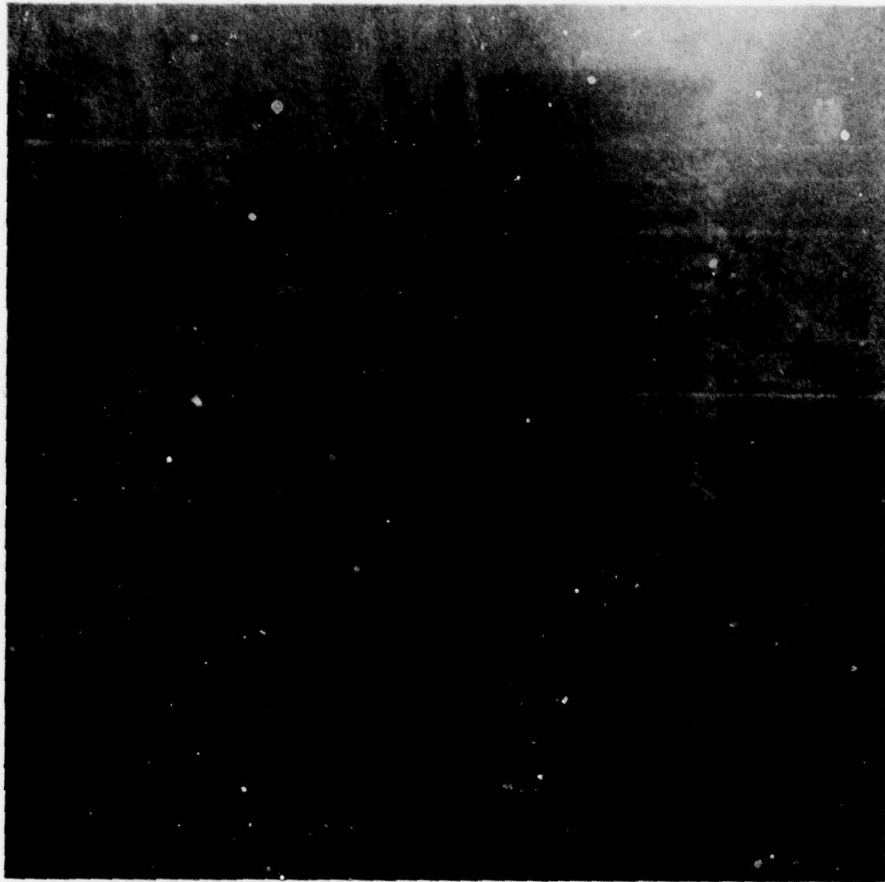


#4 of a series of photographs of crack in side of ship, about frame 192 starboard side below flight deck in way of break in flight deck. ABCR Photo No. 6029-5.

- 154 -

UNCLASSIFIED

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#5 of a series of photographs of crack in side of ship, about frame 192 starboard side below flight deck in way of break in flight deck. ABCR Photo No. 6029-6.

- 155 -

UNCLASSIFIED

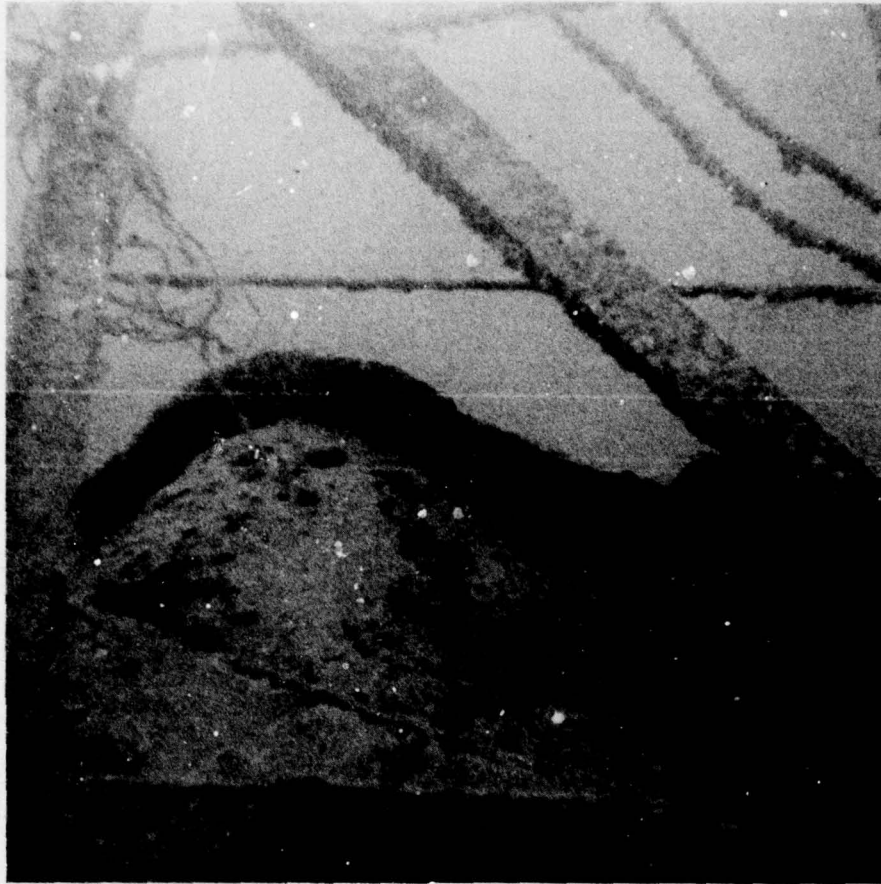
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Edge of flight deck, about frame 192, starboard side, at start of break. ABCR Photo No. 6029-8.

UNCLASSIFIED

UNCLASSIFIED

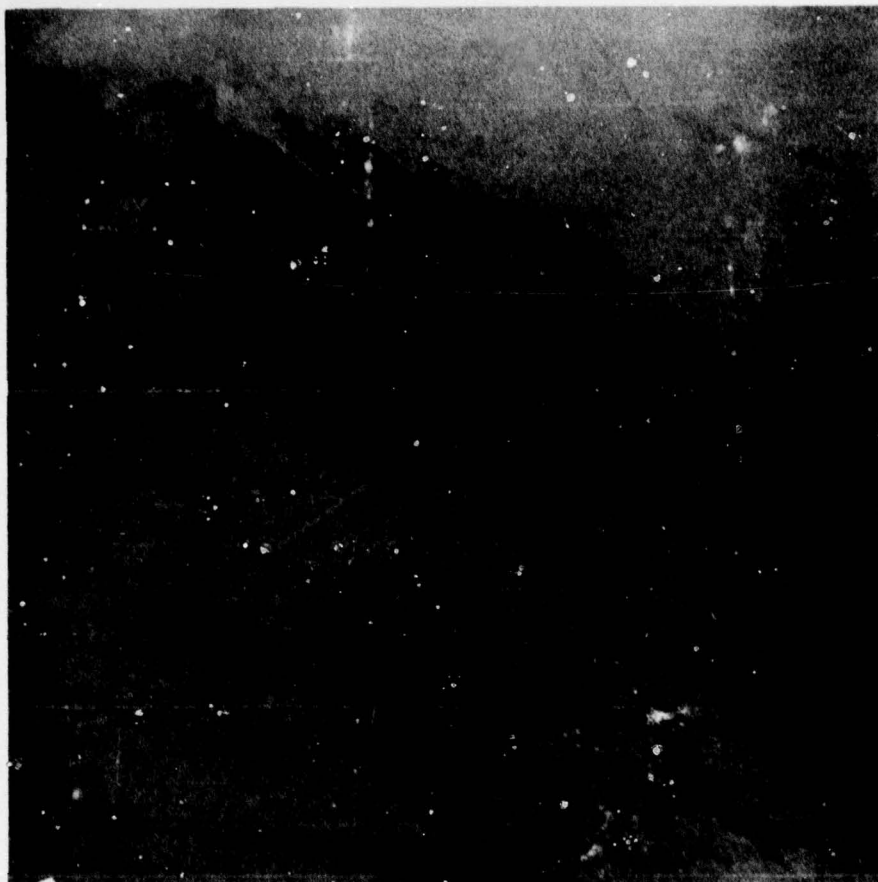


Edge of flight deck, about frame 192, starboard side, at start of break. ABCR Photo No. 6029-9.

- 157 -

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#1 in a series of pictures taken along starboard edge of flight deck looking aft to centerline from frame 135. ABCR Photo No. 6029-10.

UNCLASSIFIED

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#2 in a series of pictures taken along starboard edge of flight deck showing torpedo elevator. ABCR Photo No. 6029-11.

- 159 -

UNCLASSIFIED

UNCLASSIFIED

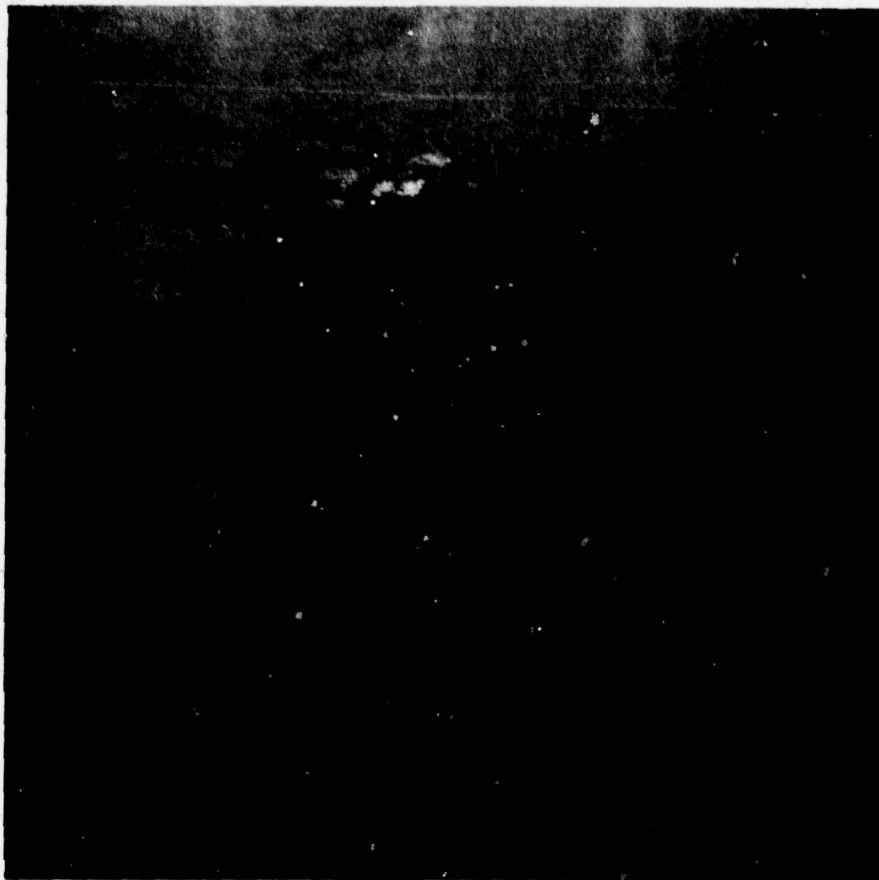


#3 in a series of pictures taken along starboard edge of flight deck about frame 132. ABCR Photo No. 6029-12.

- 160 -

UNCLASSIFIED

UNCLASSIFIED

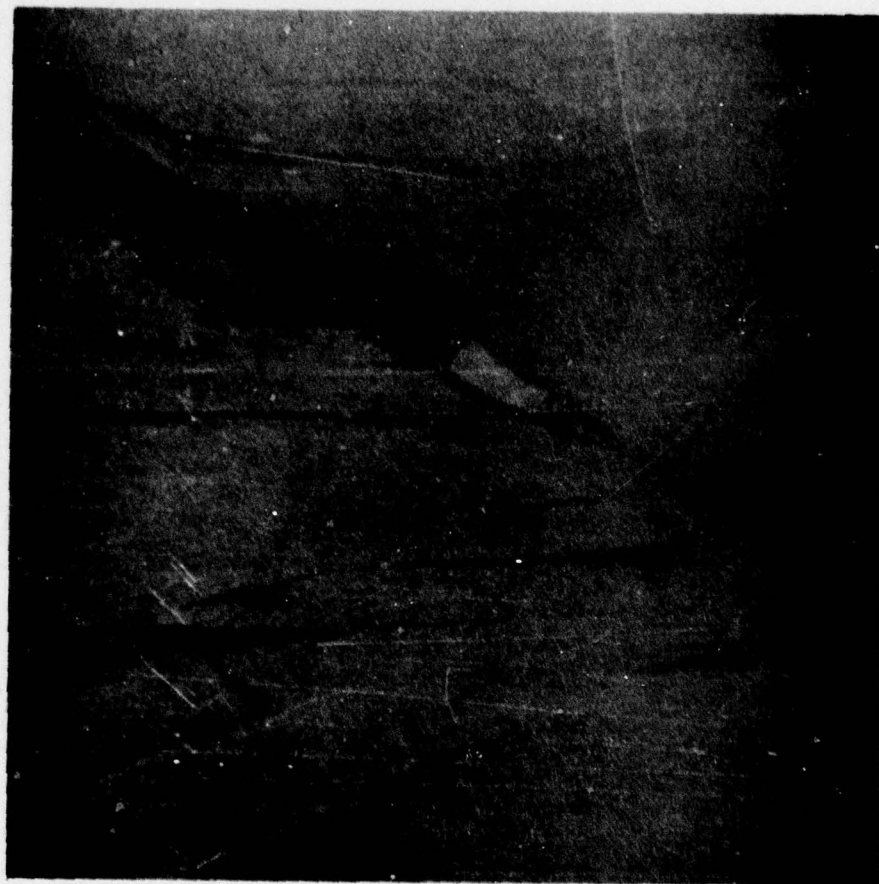


#4 in a series of pictures taken along starboard edge of flight deck about frame 131. ABCR Photo No. 6029-13.

- 161 -

UNCLASSIFIED

UNCLASSIFIED



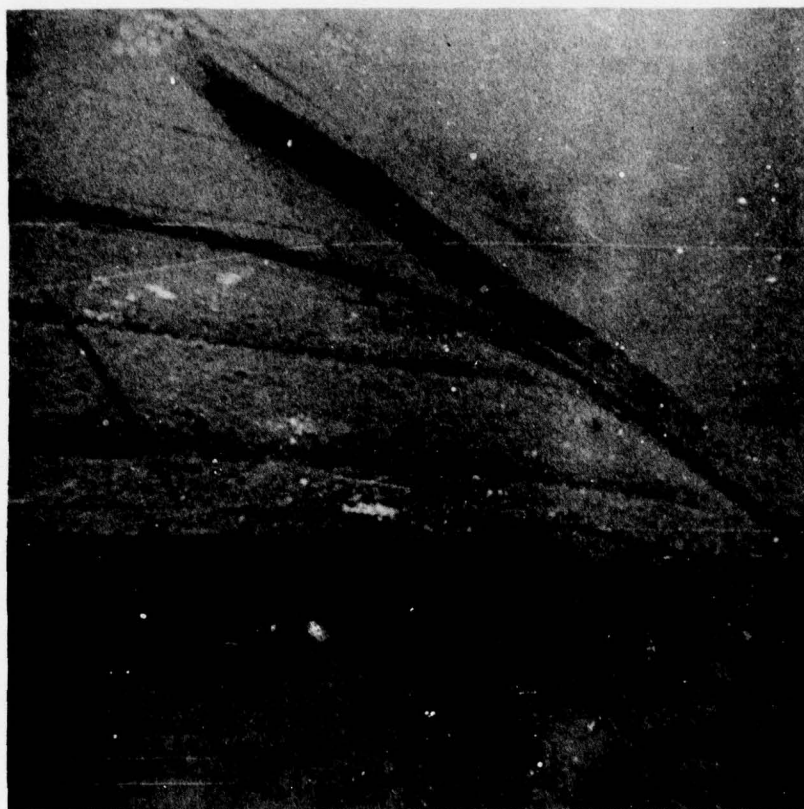
#5 in a series of pictures taken along starboard edge of flight deck about frame 120. ABCR Photo No. 6029-14.

- 162 -

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#6 in a series of pictures taken along starboard edge of flight deck about frame 124. ABCR Photo No. 6029-15. END.

UNCLASSIFIED

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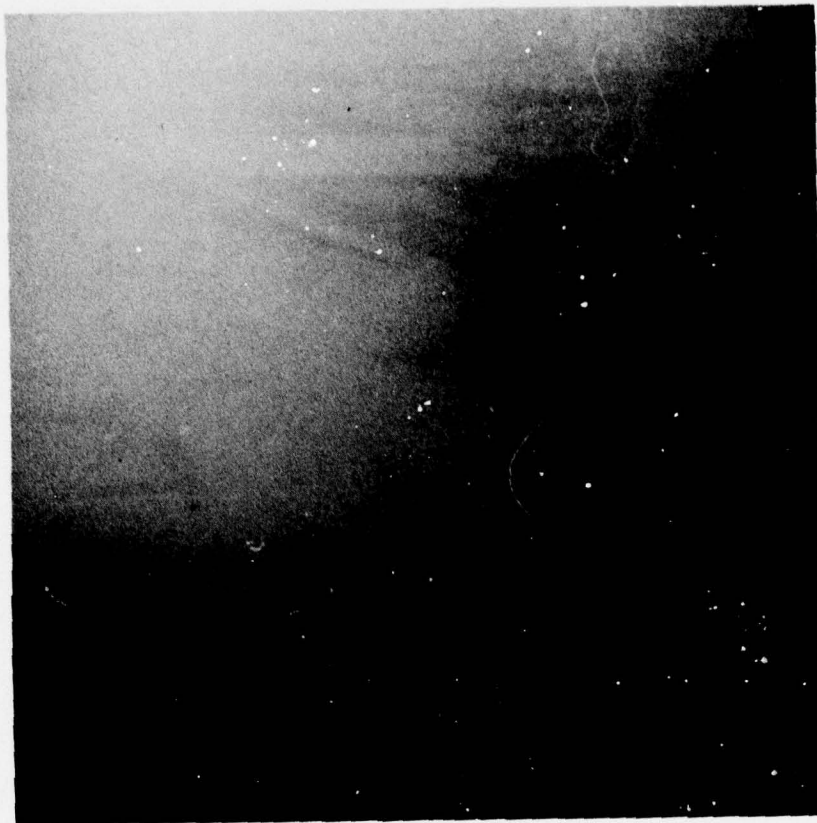
View of broken flight deck, port side looking forward, about
frame 128. ABCR Photo No. 6030-3.

- 164 -

UNCLASSIFIED

[REDACTED]
UNCLASSIFIED

UNCLASSIFIED
[REDACTED]

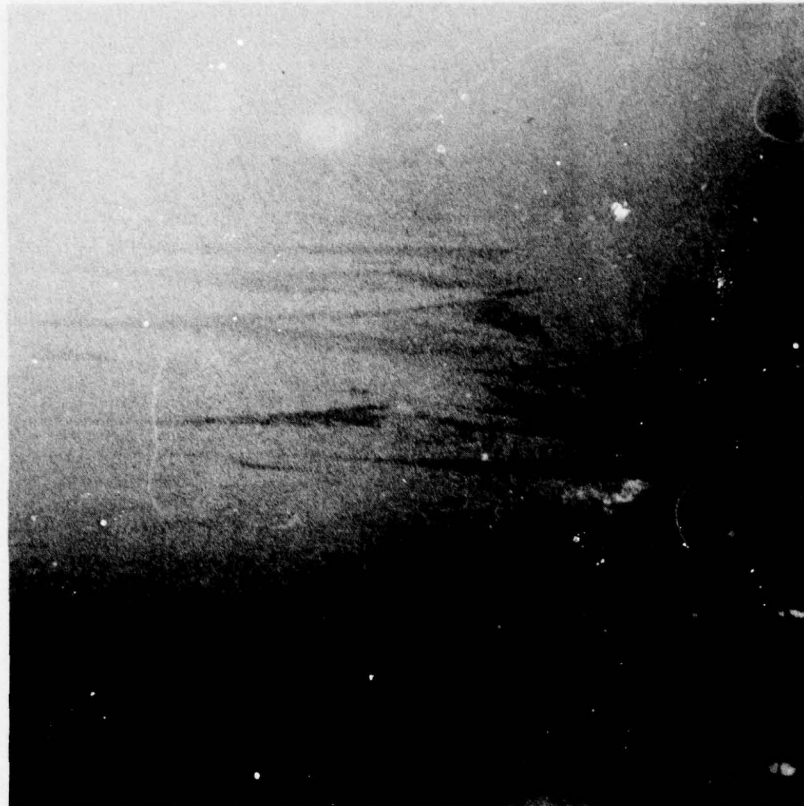


View of broken flight deck, port side looking forward, about
frame 130. ABCR Photo No. 6030-4.

[REDACTED]
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[REDACTED]
UNCLASSIFIED

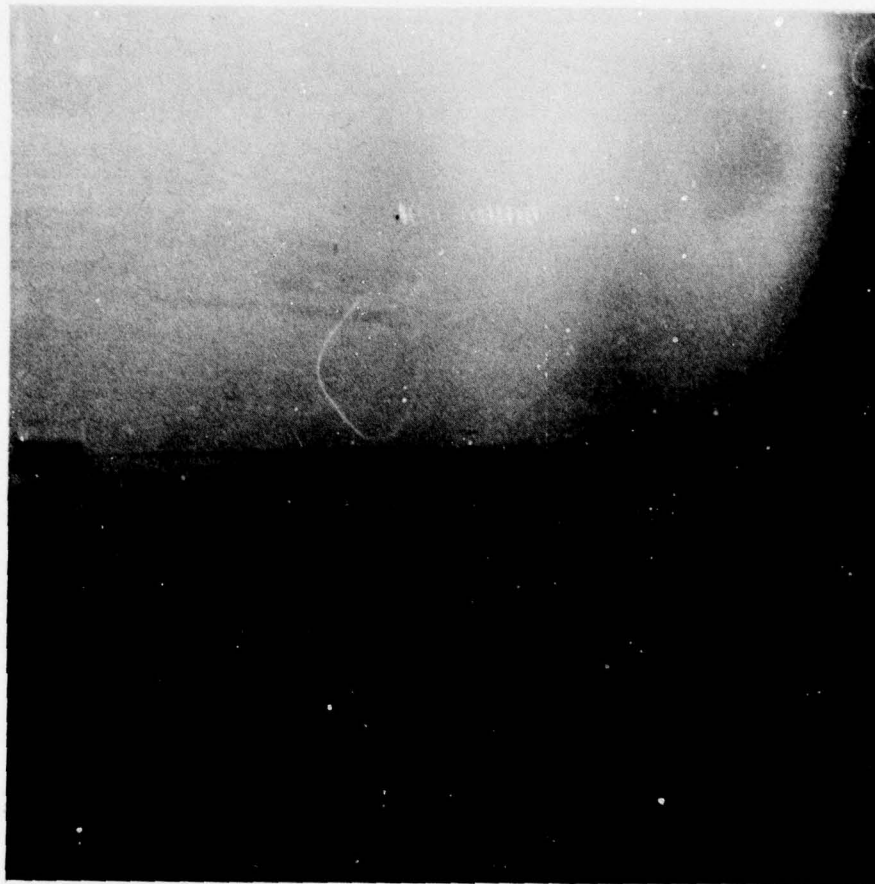
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[REDACTED]



View of broken flight deck, port side looking forward, about
frame 132. ABCR Photo No. 6030-5.

[REDACTED]
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UNCLASSIFIED

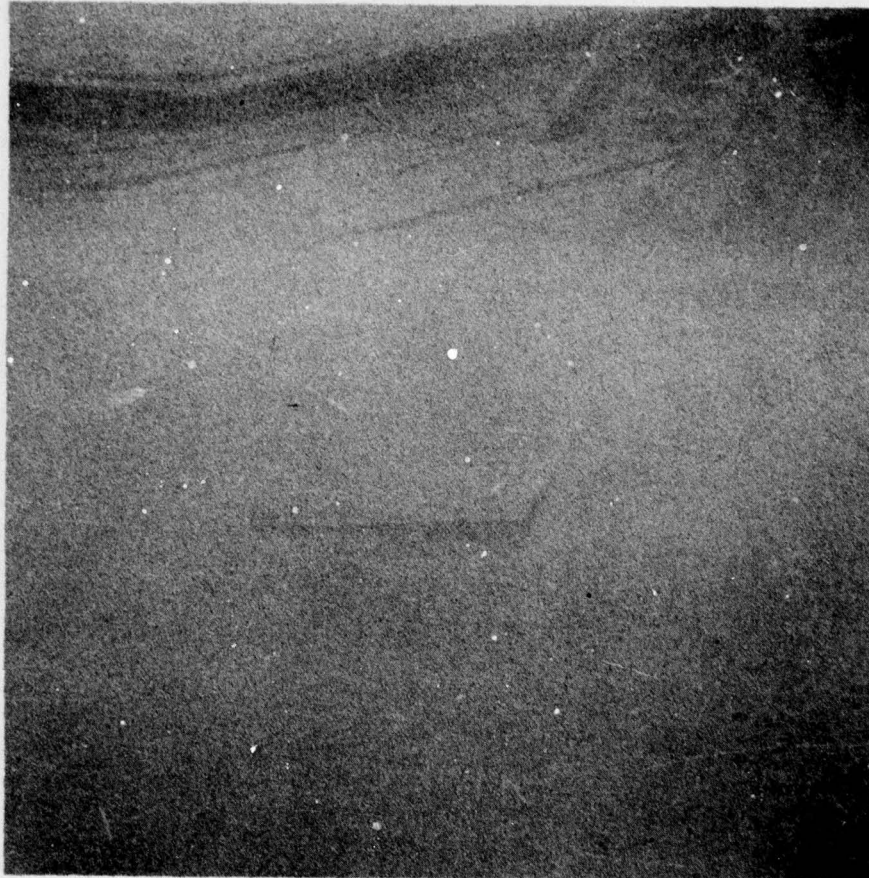


View of broken flight deck, port side looking forward, about
frame 136. ABCR Photo No. 6030-6.

- 167 -

UNCLASSIFIED

UNCLASSIFIED

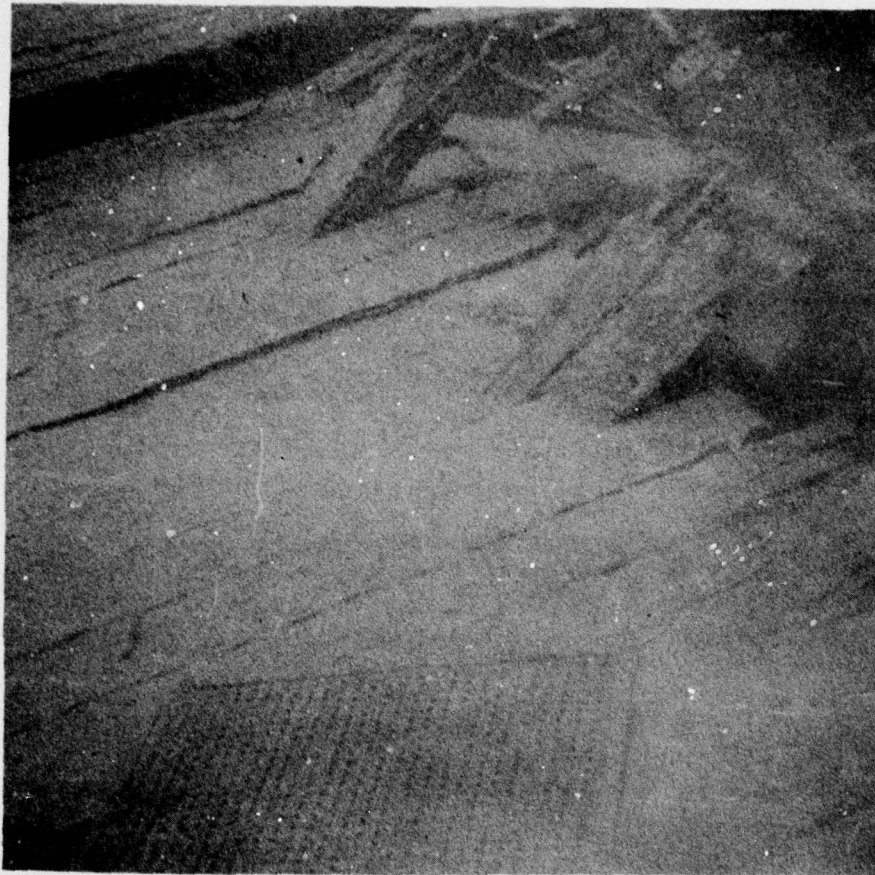


#2 of a series of photographs of damaged flight deck near centerline about frame 180. ABCR Photo No. 6027-5.

- 168 -

UNCLASSIFIED

UNCLASSIFIED



#3 of a series of photographs of damaged flight deck near centerline about frame 178. ABCR Photo No. 6027-6.

- 169 -

UNCLASSIFIED

UNCLASSIFIED

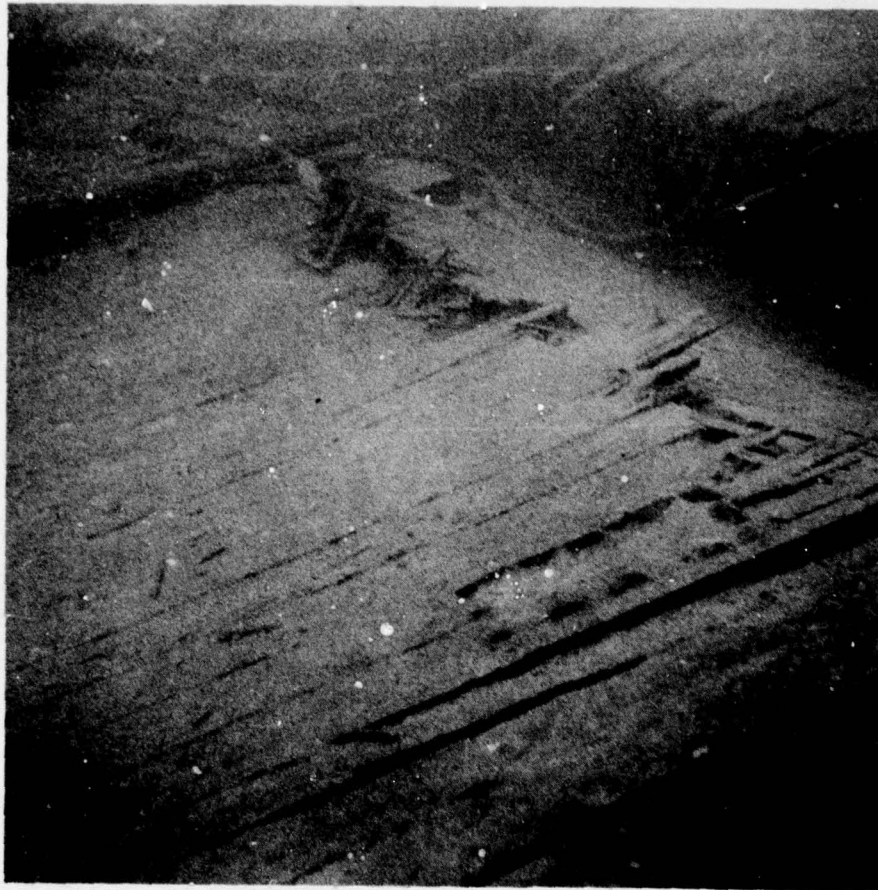


#4 of a series of photographs of damaged flight deck near centerline about frame 177. ABCR Photo No. 6027-7.

- 170 -

UNCLASSIFIED

UNCLASSIFIED

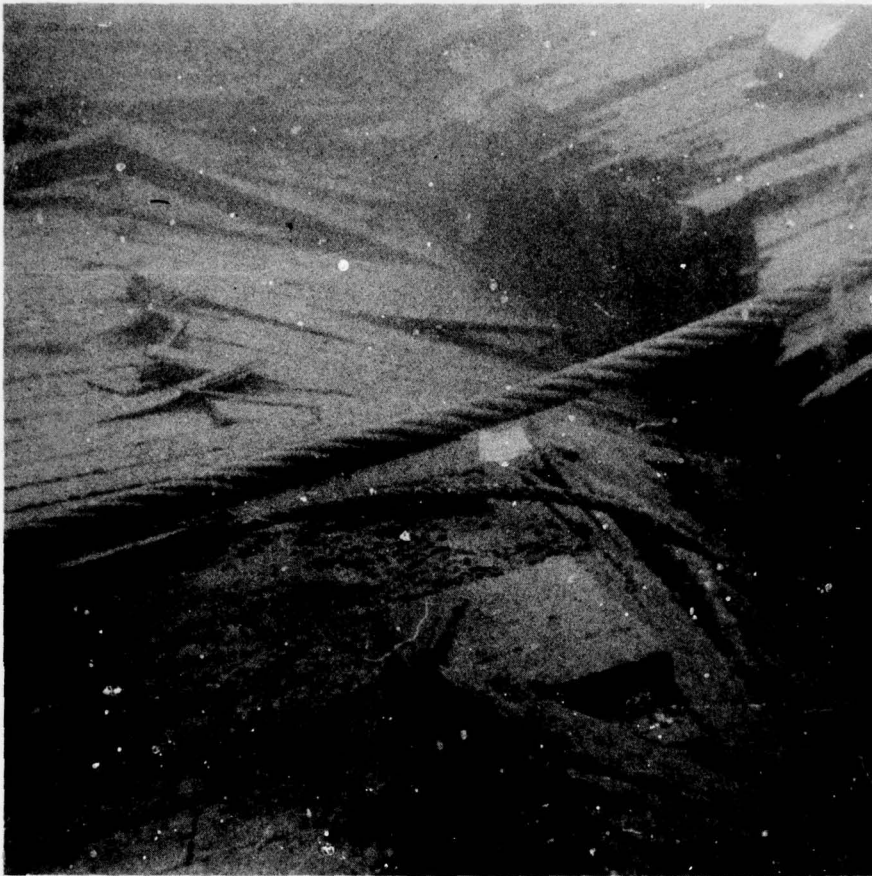


#5 of a series of photographs of damaged flight deck near centerline about frame 176. ABCR Photo No. 6027-S.

- 171 -

UNCLASSIFIED

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UNCLASSIFIED



#6 of a series of photographs of damaged flight deck near centerline about frame 175. ABCR Photo No. 6027-9.

- 172 -

~~SECRET~~
UNCLASSIFIED

~~SECRET~~
UNCLASSIFIED



#7 of a series of photographs of damaged flight deck near centerline about frame 172 showing slope up to starboard. ABCR Photo No. 6027-10.

- 173 -

~~SECRET~~
UNCLASSIFIED

UNCLASSIFIED



#8 of a series of photographs of damaged flight deck near centerline about frame 168. ABCR Photo No. 6027-11.

- 174 -

UNCLASSIFIED

UNCLASSIFIED



#9 of a series of photographs of damaged flight deck near centerline about frame 165. ABCR Photo No. 6027-12.

- 175 -

UNCLASSIFIED

UNCLASSIFIED



#10 of a series of photographs of damaged flight deck near centerline about frame 162. ABCR Photo No. 6027-13.

- 176 -

UNCLASSIFIED

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#11 of a series of photographs of damaged flight deck near centerline about frame 160. ABCR Photo No. 6027-14. END.

- 177 -

~~UNCLASSIFIED~~

UNCLASSIFIED



Buckle in side at about frame 192 in way of break in flight deck. ABCR Photo No. 6029-1.

- 178 -

~~CONFIDENTIAL~~

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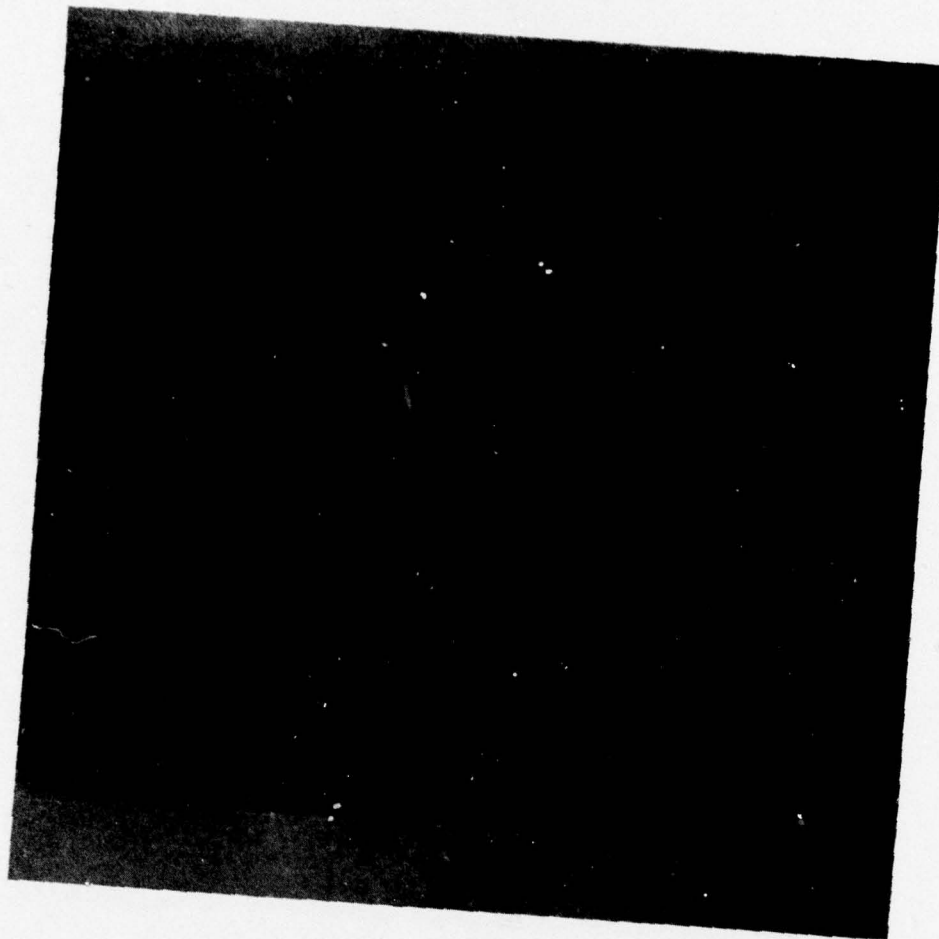


#1 of a series of photographs of crack in side of ship, about frame 192 starboard side below flight deck in way of break in flight deck. ABCR Photo No. 6029-2.

- 179 -

UNCLASSIFIED

UNCLASSIFIED

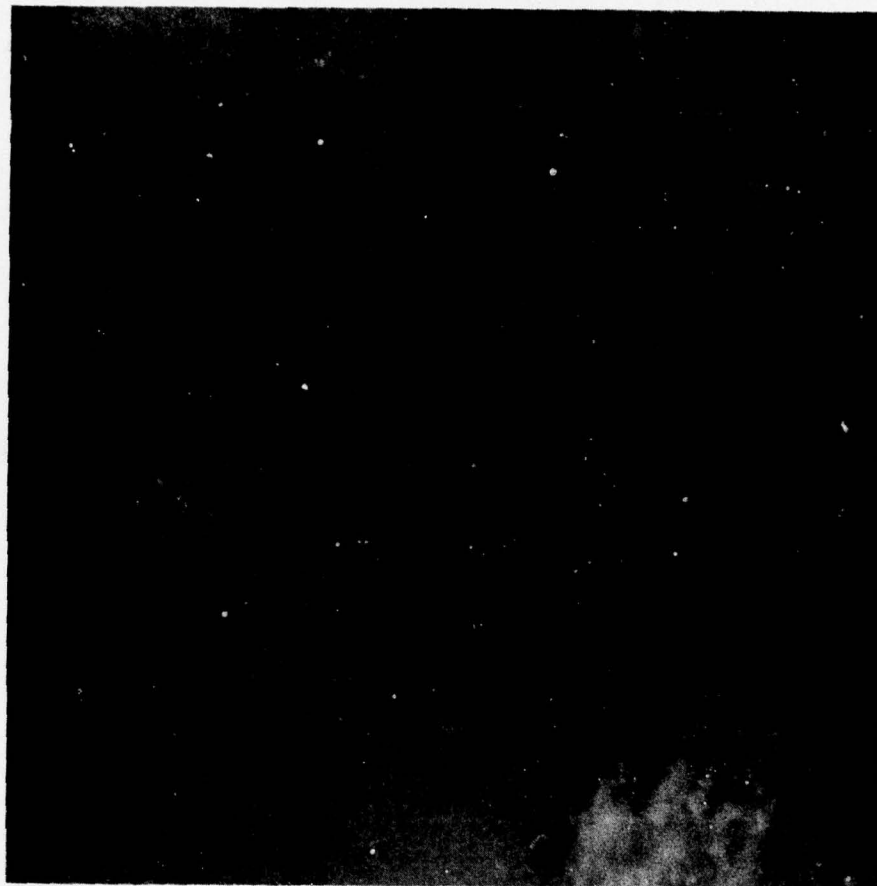


#3 of a series of photographs of crack in side of ship, about
frame starboard below flight deck in way of break in flight
deck. ABCR Photo No. 6029-3.

- 180 -

UNCLASSIFIED

~~SECRET~~
UNCLASSIFIED



#3 of a series of photographs of crack in side of ship, about frame 192 starboard side below flight deck in way of break in flight deck. ABCR Photo No. 6029-4.

- 181 -

~~SECRET~~
UNCLASSIFIED

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ANNEX C : SARATOGA

Divers' Reports

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ANNEX C: DIVERS

REPORTS ON SARATOGA

DIVER: PLEMEL, L. M. 328 35 47, CSF, DM

17 July 1947

Landed on deck of SARATOGA and secured the descending line to an angle iron stanchion welded to the deck on the starboard side. Went off on the starboard side and saw the frame No. 30 painted on deck. Went aft until I got to a 5-inch gun mount; a little aft of that is a hatch and also the elevator which was torn off. From there I went to the port side to get to the other side of the elevator.. That side of the elevator was sticking up. Also on the port side was a "Christmas tree" (BuOrd blast gage tower) and under it were two torpedoes. From there I went back up the port side to the bow. The deck of the carrier slopes aft; also it has a 5° to 8° starboard list. The deck is covered with about 1/4 in. of coral dust. From there I went aft again on a criss-cross. On the starboard side of frame No. 35 was a 40 mm. gun, which seemed to be in good condition. Forward of that was a director. Then I was told to return to my descending line. On the way back I picked up a piece of steel.

DIVER: L'HEUREUX, E. A. 212 68 48, BM, DS

17 July 1947

Landed on the bottom, left descending line and started walking aft behind first diver. Ship has a slight list to starboard with the bow having a slight slope. I located frame No. 30 on starboard side. At frame No. 45 (approximately) there is a slight buckle in the flight deck. Smoke stack torn off completely. Pieces of steel strip on flight deck curled up at one end. Elevator from a distance seemed to have a slight buckle. The 5"/38 cal. gun turret seemed to be in good condition.

DIVER: CRESSEY, O. R. 208 75 17, M1, D0

17 July 1947

The forward edge of the flight deck and life line and jack staff appeared to be in good shape. The bottom was covered with a silt that stirred up but settled fast and did not greatly bother visibility as long as I kept moving. There was a water cask on the bottom, it was in good condition. There was one hole on the bottom that was about 10 ft. in diameter and about 5 ft. deep. Other depressions on the bottom seemed to be more rolling and without the sharp edges of that one hole.

DIVER: SCHABER, G. B. 329 52 33, TM2, DT

18 July 1947

Tended lines for Chief Mineman A. B. Holmes who was headed aft from descending line. Visibility 15 to 25 feet. Saw crane starboard side of flight deck forward of island. Forward deck plates (palisades) torn up along center line of flight deck, about nine of them.

DIVER: HOLMES, A. B. 279 50 89, CMN, DT

18 July 1947

I landed on flight deck just forward of frame No. 30. Adjacent to descending line was an antenna bent over about 18 in. from the deck and lying about 40 ft. athwartship on the flight deck. Proceeding aft on the starboard side. I came upon a structural steel boom. It was secured in and no apparent damage was noticed. Outboard on the catwalk was a 5-inch gun mount. The only apparent damage was sea growth and debris surrounding the mount. I took two pictures, one looking starboard and aft, the other looking port and aft. I then proceeded aft to the elevator.

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DIVER: HOLMES, A. B. (CONT'D)

Near it, on the port side, are a few objects looking like U. S. Tiny Tims. Inspecting the elevator, it is badly damaged. On the port side it is broken and buckled up, pyramid fashion. On the starboard side it is not visible. Took three pictures. On the starboard side forward of the elevator is an open bomb hatch. The hatch cover is standing in the vertical position. Took three pictures. I then returned to descending line.

DIVER: CREDDLE, C. M. 262 36 33, CMN, DO

18 July 1947

Tending diver No. 1. Reached bottom with very little light. Could see about 10 ft. Located what I believed to be a plane. I could not get off a part to bring topside. I made out the word Fairchild on a piece which was about 8 in. long and about 2 1/2 in. in diameter. I could not work this piece loose before time to leave the bottom.

DIVER: PARK, H. E. 301 26 48, TM3, DO

18 July 1947

Left surface, reached bottom, followed No. 1 diver to wreck of plane and then continued on to the wreck of the SARATOGA. Stayed and inspected around keel and hull of the wreck about frame No. 30. The hull of the ship at said frame was buckled in about midway between the water line and the keel. Thought I saw two holes just below the water line at the same frame but would have to make closer inspection to be positive. Tended No. 1 diver back to his descending line and he left bottom for the stage. I followed him up.

DIVER: GORING, Carl, 321 22 31, CBM, DO

18 July 1947

Left surface, reached bottom, waited for No. 2 diver. Started for wreck, passed plane wreck. Reached wreck. Started forward, life line and air hose got fouled in plane wreck. Returned to plane wreck and cleared myself, started for wreck again, reached same, started forward to the bow, reached bow, started aft looking for damage of hull, 50 ft. from bow forward plates on each side of keel pushed in to a depth of 4 to 6 in, some vertical frames also pushed in, rivets in plates were O. K., were not sheared off or loose. Still going aft, damage the same, plates on each side of keel pushed in, about 100 ft. from bow found side of hull pushed in about half way between the water line, keel, returned to descending line, returned to first stop.

DIVER: JOUSSET, E. C. 224 49 53, EM2, DS

18 July 1947

Hit deck on starboard side of SARATOGA. Left descending line and went aft to elevator on flight deck. Inspected gear locker water tight door. It was ruptured but still on hinges. Then left the superstructure and inspected elevator. The elevator is lying from port to starboard. Port side aft up and port side forward down. With both fore and aft down on the starboard side. Then returned to my descending line.

DIVER: PRICE, J. F. Jr. 295 26 50, CBM, DO

18 July 1947

After I got to the ship bottom, I could see under it very well. The plates next to the keel were concave, also the plates above that looked to be the same only on a smaller scale, this seemed to start about 40 ft. aft of the bow. This plate was concaved enough to form an air pocket of maybe 1 in. or more deep. All forward of that seemed to be normal then I started aft over my same tracks. After I had gone maybe 50 or 60 ft. I ran into a hole which had a plane in it that was

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DIVER: PRICE, J. F. JR (CONT'D)

all broken up, so I started around it to keep myself clear the hole, the plane was in a hole about 5 ft. deep then I was told to return to my descending line to stand by to come up.

DIVER: GAY, G. L. 283 36 58, MM1, DO

18 July 1947

I did not see the ship while descending but upon reaching the bottom I could see the tracks and hose marks of other divers on bottom. After my tender reached bottom I followed the tracks to the wreck about 10 ft. forward of plane wreck. Noticed that plating was bent in just above keel and also above longitudinal frame and slightly above turn of bilge. Plating was bent in from 1 ft. in places to about 4 ft. in others. The keel at the place I started my inspection was about 6 ft. off the bottom. I continued my inspection going aft, about 30 ft. aft of this there was another piece of plane wreckage and directly aft there was a hole in the ocean floor about 6 ft. in diameter and about 6 to 8 ft. deep and about 12 ft. from the keel. About 6 ft. aft of the hole the keel ran into the bottom of the ocean floor. I became fouled here and could not continue aft so I went under the keel. The keel did not appear to be bent or broken but the plating was dented in more than at the beginning of the inspection. The rivets appeared to be slightly shifted or sheared. That is, they were pulled in on one side of the rivet hole and cocked up on the other side. Due to barnacles and growth, it was hard to tell exactly what condition the rivets were in. They were still holding the plate though. The longitudinal frames did not appear to be bent but the transversal frames were. The ocean floor for about 20 ft. forward from the place where the keel went into the sand had the impression of the keel in it. It appeared as though the keel had been resting on the bottom forward and then raised up leaving this impression in the ocean floor. Diver told to return to the other diver to investigate what he had found which turned out to be the first piece of plane wreckage. Topside requested me to bring up a couple of pieces so I broke off a couple of pieces of 3/8 in. aluminum tubing. My life line and hose was fouled in the plane wreckage and also the light line. After clearing these lines, I left the bottom. While even with the flight deck, I noticed some of my bubbles coming out of the flight deck but could not see definitely from which place they were coming. About 1 hr. later, while decompressing, I noticed a considerable amount of air bubbles coming up from the wreck. I asked topside if there were any divers down and they answered negative. These bubbles were probably my own that had been trapped in an air pocket and sifted up through the wreck.

My visibility was restricted due to the sun setting. Maximum visibility was about 8 ft.

DIVER: L'HEUREUX, E. A. 212 68 48, EM1, DS

19 July 1947

Cut descending line and moved it aft and secured on pad-eye on deck just forward of 5"/38 cal. gun turret or 18 ft. forward of barrier (palisades) (approximately). Walked aft to bomb elevator, hatch opened from inboard, condition of hatch (cover) very good, it swings on three or four hinges which are also in good condition. Knife edges on hatch itself were in good condition. Noticed two steel single blocks on the starboard side below the hatch which had wire running through and seem to have quite a strain. Pipe life line between superstructure and plane elevator is bent quite a bit. Knife edges on plane elevator hatch are torn away at intervals. Possibly where elevator had been secured.

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DEFENSE ATOMIC SUPPORT AGENCY WASHING
BIKINI SCIENTIFIC RESURVEY. VOLUME II
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REPORT OF THE DIRECTOR --ETC(U)

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DIVER: PLEMEL, L. M., 328 35 47, CSF, DM

19 July 1947

Landed on bottom about 10 ft. from the wrecked plane, from there I could see about 100 ft. of the ship (50 ft. on each side of myself) for about 2 sec. the side of the ship looked undamaged to me. I could not see after that except about 5 ft. as I went aft I had to feel the ship's side as I went along. The plates all felt O.K. Where the keel rests on the bottom it does not look like it is broken.

DIVER: HOLMES, A. B. 279 50 89, CMN, DT

19 July 1947

I landed inboard on the flight deck on the starboard side. I proceeded aft on the port side passing the main elevator to the aft side. The elevator is badly damaged with the port after corner protruding above the flight deck about 12 ft. The other side being down out of sight. Part of the border of the elevator shaft is ripped free. Immediately aft, the stack is down on the deck reaching within 15 ft. of the port side. It was not possible for me to make a close inspection or proceed aft.

DIVER: MULLEN, R. F. 201 61 73, CSF, DM

19 July 1947

I landed on bottom and went to ship's side and inspected keel and dead rise. I came upon a large concave place in the bottom and took two pictures of it. I proceeded aft and came upon a large section of plating that was washboarded. The transverse frames were straight in appearance but the plating was all concaved. The plating did not appear split at seams nor did I find any torn spots in the hull. I then was told to go back which I did towards my descending line.

DIVER: MOON, F. T. 239 00 17, DT

19 July 1947

Hit flight deck next to crane on starboard side. I tended photographer while taking pictures of ruptures and other wreckage such as bomb elevator, with its hatch cover tending up, also elevator is heavily damaged. There are two Tiny Tims under a camera rack which was worked on before the test. There are two bomb carts one under the blast gage tower and the other out on deck next to elevator. The blast gage tower is twisted. There are several pieces of wreckage in the elevator hole which is wide open. I had in hand all of the time No. 2's lifeline, hose, and camera wire.

DIVER: FREITAS, J. D. 375 90 05, CMN, DT

19 July 1947

Went down to flight deck of SARATOGA, landed on flight deck just forward of palisades. Went aft to elevator then over to port side and went aft till I reached the stack. There I took a series of pictures from port to starboard along the stack, taking in as much detail as possible. Reaching foot of stack, I stepped forward to get a little closer to the hole left by the stack, and there found that deck to be concaved so I got down on my side and took a picture along deck hoping to show the above concave. I then went clear to starboard, there finding deck badly crushed and torn. Just aft of this torn deck, stands a deck house, no visible damage but above it is a catwalk bent and torn. I took two pictures of this, more in the form of a silhouette, then took a picture of hole left by stack. I then returned to my descending line and returned to the surface.

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DIVER: MOTIKA, Ralph, 283 28 93, CMA, DO

19 July 1947

After reaching the bottom I followed the camera cable. I came to plane debris where camera had been fouled on previous dive. I freed camera and it was taken up by topside. Started inspection of SARATOGA, starboard side forward. Visibility was good, about 30 to 40 ft. I noticed the keel tapered off the bottom and could walk under the wreck. There were skid impression marks of the keel in the bottom. The keel looked intact, but the garboard strake was buckled in, concave, as far as I could see fore and aft to where the keel rested on the bottom. The garboard strake was bent in to nearly a perfect arc. However, the impressions of the transverse frames could be easily seen. Frame spacing was about 4 ft. I walked out from under wreck to inspect the side and the plates seemed to be pressed against the transverse frames as they could be distinguished every 4 ft. The side plates seemed to be "Washboarded". At this time I was directed to return to descending line and come up.

DIVER: MOORE, W. M. Jr. 371 96 58, BML, DO

19 July 1947

I commenced inspection of the bottom and keel at approximately frame No. 36 and inspected aft to approximately frame No. 58 and found no damage to keel, frames, rivets or plates other than that damage which had been reported at frames No. 36 to frame No. 42 approximately. Going back forward, I took four pictures of plates on the side of the ship. Trying to get the pictures where the plates joined.

DIVER: COKER, C. W. 269 55 87, COX, DT

19 July 1947

Landed beside the crane and went aft of the twin 5-inch gun mounts. Saw diver No. 2 waiting so I started tending him. Walked aft between island and elevator to the stack where the diver No. 2 began taking pictures. I didn't go all the way aft of the stack so I cannot describe what it looked like, or how badly it was damaged. Then we came around the stack on the inboard side where I saw a plane that looked to be under the stack. The prop was badly damaged and the body severely scorched. It was facing forward of the stack and was a fighter. I started back for the descending line and diver No. 2 followed.

DIVER: JOUSSET, E. C. 224 49 53, BM2, DS

20 July 1947

Hit flight deck on starboard side of SARATOGA, crossed deck to port side of elevator to superstructure of bridge, turned and went across to starboard side between island and stack over plate wreckage on deck to port side of island. Saw signal light that was blown completely off island. Also saw an airplane motor along the outboard side of the stack.

DIVER: DENISON, H. D. Jr. 283 15 91, CHM, DM

20 July 1947

I descended on the starboard side of the wreck. Visibility was good. I descended slowly and could see the side most of the way to the bottom. I landed about 20 ft. from the ship. I went alongside and walked aft. Noted no damage. Close alongside is some wreckage and looks like it might be a stack. I took four pictures of this from different positions. I returned to the descending line, sent up the camera and came up. Fish and silt interfered some when taking the pictures.

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DIVER: CREDLE, C. M. 262 36 33, CMN, DO

20 July 1947

Reached bottom as tender for No. 1 diver. Reached side of wreck and tended from there till time to leave the bottom. Observed what I thought to be a hole about 6 ft. above my head but did not have time to investigate.

DIVER: GORING, Carl, 321 22 31, CBM, DO

20 July 1947

Left surface, reached bottom, waited for No. 2 diver. Visibility about 20 ft. Left descending weight for wreck but went in wrong direction. After some time made a half circle and found wreck. Started aft on wreck, found rolling chock, about 50 ft. from where rolling chock started, found crack in hull, from rolling chock it went straight up the side of the hull, a length as high as I could reach, crack was about 3 in. across at the bottom, 4 to 6 in. at the widest part and about 1-1/2 in. at the top, and extending on up the side of the hull out of reach from where I was standing on the bottom, the crack seemed to run straight up the side along side of a frame. I stuck my hand inside the crack, and could see, and feel what seemed to be a frame. I took several pictures, but visibility was very poor, topside told me to return to my descending line, but as I left wreck I ran into some wreckage a few feet from the side of SARATOGA, it looked like a ship's smoke stack but not the SARATOGA. Took several pictures, returned to descending line and came up to first stop.

DIVER: GAY, G. L. 283 36 58, NML, DO

20 July 1947

I left the surface with the camera and descended to the bottom. I did not see the SARATOGA on the way down but I did see the descending line on the other side of the COUCAL while going down. Immediately upon hitting the bottom I struck out for the starboard side of the SARATOGA at a 45° angle towards the after end. I came to the wreck at a place where the rolling chock or bilge keel was above my head and continued working aft to a place where the rolling chock was about even with my head, I saw a hole about 4 in. in diameter. I did not know whether this was from damage or a part of the ship's construction so I took two pictures of it and then continued aft. I went by a small piece of wreckage lying on the bottom against the side of the ship. The wreckage looked as though it might have been part of the stack. About 2 ft. forward of the wreckage there was a crack in the hull. A long tapering gap. It was about 1 3/4 in. wide at a distance of about 6 ft. up from the rolling chock and about 2 ft. up on the blister. It ran down the blister to the rolling chock and widened as it lengthened at the rolling chock it was about 5 in. wide. The tear did not seem to be pushed in or out and the edges were rough but not jagged. The plate seemed about 3/4 in. thick. I reached inside and found another flat surface about 4 in. inside the hull. I ran my hand inside along the flat surface as far as possible but I could feel no other obstructions. This tear was not at a seam but in a plate itself. I rolled under the rolling chock which was about 20 in. off the ocean floor and under it the crack continued but instead of a gap it was overlapped. It ran in a straight line toward the keel for about 3 ft. down from the rolling chock and then ran at a sharp angle of about 45° toward the keel and aft. I could not investigate it any further as it touched the bottom of the ocean floor. I did not have any visibility so I could not take pictures of the crack in the hull. I was instructed to proceed aft. I tried to go over the wreckage and then decided to go around it. I received word from topside that the other diver had found a hole in the ship. I was told to go back to him and investigate what he had found. I went back to the other diver and found that he had found a hole in a piece of the wreckage which as I said before seemed to be part of the stack that had fallen to the bottom. Evidently the other diver thought it was part of the ship. By that time my time had run out and I was told to come back to my descending line which I did and was started up.

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DIVER: PLEMEL, L. M. 328 35 47, CSF, DM

21 July 1947

Landed on the bottom and went to the wreck, port side. When I got there, I went forward until I could see the bow then I went aft. As I went aft all the seams and rivets were in good shape until about 150 ft. from the bow the garboard plates are pushed in on the upper side. I took pictures of them. The second plate from the keel is also pushed in on the upper edge. Then as I went aft I found a strainer on a sea suction. It was in good shape except for the plates around the suction. They looked like they opened up about 1/16 in. The strainer is fastened on with 4 studs. About 3/4 in. studs with 1 in. nuts. I also took pictures of the strainer and what I believed are cracks around it. The bottom is good except for a few places where it is soft. The bottom on the port side is about 6 ft. higher than on the starboard. I believe the ship hit the bottom on the starboard side and made that hole.

DIVER: MULLEN, R. F. 201 61 73, CSF, DM

21 July 1947

I reached bottom and went under the hull of ship. I came upon dished in parts of hull close to keel at garboard strake and took a picture. I then went aft to the sea suction and waited for the other diver to reach that place. I then went aft and came to bilge keel and then went aft till I came upon about 25 ft. of dished in hull and took numerous pictures of that part of hull. Upon going further aft, I came upon a large box with six handles on it. It appeared to be about 3 ft. high, 3 ft. wide and about 10 ft. long. It appeared to have some kind of instruments in it and all boxes were labeled "authorized personnel only". I then went aft and came upon a bulge just above the bilge keel and along side a large doubling plate. I took pictures of it and then tried to go further aft, but could not get enough slack in camera line or lifeline and air hose. I was then told to return to descending line and come up, which I did.

DIVER: BOSTWICK, E. E. 316 56 01, CHM, DO

21 July 1947

Went down as No. 2 diver to take sea strainer off bottom of SARATOGA. Took tool bag with tools and underwater light with me. Took off 4 nuts that were used to hold strainer on. Tried prying off strainer with screw driver with no success. Returned to my descending line and started up.

DIVER: MOORE, W. M. Jr. 371 96 58, BML, DO

21 July 1947

At frame No. 32 upon reaching the bottom, port side, I proceeded to inspect the side of bottom for any damage to plates, rivets, or frames. Working aft along the bottom and side, I came to the damaged places which had previously been found, inspected and photographed by other divers. Going on aft I found a box, approximately 5 ft. x 10 ft. filled with gear. This box had been found by an earlier diver so I paid little attention to it. Further aft I found an antennae spreader, commonly used on aircraft carriers and photographed it. The rolling chock was on top of it so I could not see how far it ran under the bilge keel. I came to the approximate middle of the ship and found a 2 1/2 or 3 in. pipe running vertical with the side. The pipe and holding bracket had come loose from the ship, how far up I could not see. The rolling chock for most of its entire length along the middle of the ship is in the bottom. On my inspection going aft I found no damage except the two places already seen and spoken of. The plates, rivets, rolling chock and contour of the ship seemed in good condition. Also at the forward end of the rolling chock, I crawled underneath it and found conditions good underneath, there. I had a little better than average diving conditions due to fair visibility so I believe this report is fairly accurate.

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DIVER: O'DONNELL, J. F. 650 04 04, SM2, DT

22 July 1947

Left descending line port side to recover descending weight on starboard side. Weight was outboard of wire life lines. Cleared weight topside, heaved it in. Noticed life lines loose and parted in places and wires fouled on plane winch. Visibility fair.

DIVER: PLEMEL, L. M. 328 35 47, CSF, DM

22 July 1947

Landed on the bottom port side and went to the strainer. Started to burn the inboard side of the strainer. Used 4 rods and then decided to try to pull it off with the "J" bolts and pinch bar. Put in 2 "J" bolts one inboard and the other on the upper side (outboard). Diver No. 2 started pulling on one side and I pulled on the other. The strainer then came out except for the lower or inboard side. We got it out far enough so a diver could see inside and also put his hand inside. Due to the fire that was burning inside, I could not put in my hand. The fire was still burning when I was told to return to the descending line.

DIVER: GAY, G. L. 283 36 58, MM1, DO

22 July 1947

I left the surface with tool bag and instructions to remove strainer from sea chest on port side of SARATOGA by prying with "J" bolts and if it proved impracticable to start burning strainer with "Oxy arc" burning torch. As soon as the ground wire and torch were on the bottom I started down the descending line. When I reached the bottom I could not see more than 1 ft. due to the fact that the torch lead and ground wire were surging with the roll of the ship and had stirred up the coral powder on the bottom. I cut the leads loose and started in the direction of the ship. I passed the underwater light and light cable that the divers ahead of me had left and continued in the same direction until the hull of the ship was in view. My visibility at the time and place was about 15 ft. I passed the indentations in the hull that the other divers had previously reported and a little further on aft I came upon the strainer. It was about 12 by 18 in. and countersunk into the hull about 1-1/2 in. The nuts (4 of them) had been removed from the studs and the strainer was a plate of unknown thickness and material was about 3/8 in. hole spaced about 1/4 in. apart. The strainer was about 3 ft. outboard of an indentation along the garboard strake. I waited for the other diver with the light (which was of little or no use) and he assisted me in trying to put the "J" hooks in the plate. This we did not succeed in doing because the hooks had been bent at too sharp of an angle and could not be worked up into the strainer holes. We then decided to burn. When I stopped I noticed a very light fire in the sea chest. I backed away from the sea chest so my air bubbles would not feed the fire. I told topside to tell the other diver to back away as his bubbles were also going up into the sea chest. The fire died out from lack of oxygen and by then our time was up and we had to return to the descending line. Immediately after I left the bottom with tool bag and light I came up along side the wreck about 4 ft. from the descending line and got the descending line even with the flight deck where some safety netting and net supports were bent. After reaching the stage I thought over the job and it occurred to me that the sea chest must have been water tight because our bubbles from the torch and helmets formed an air pocket in the sea chest which did not go away.

DIVER: MULLEN, R. F. 201 61 73, CSF, DM

23 July 1947

I reached bottom and went inboard to the hull and then went aft to the strainer. Upon inspection I found that it appeared to be intact. I then went aft to the box and then No. 1 diver tended my lines and I went aft until I noticed sea growth on the hull in two vertical lines going from the rolling chock to the

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DIVER: MULLEN, R. F. (CONT'D)

blister above. I inspected and there appeared to be a crack in the hull, but it was very close. I was of the impression that it was a split in the hull. I then came back to the descending line and came up.

DIVER: MOORE, W. N. Jr 371 96 58, BML, DO

23 July 1947

On reaching the bottom No. 1 diver took my lines in hand and we both proceeded to the wreck. No. 1 diver followed me to approximately halfway to my inspection area and waited there tending my lines from the bottom. I walked on aft and about midships of the wreck found where the previous diver had reported a small crack in the side of the ship. Using a scraper I had taken down with me, I scraped the mass like substance from the bottom and found a small crack in the anti-fouling paint on the bottom. After scraping the growth and paint from the bottom I found the bottom under and around the crack rusted a little and slightly pitted from rust, otherwise the bottom was in good shape. After reporting what I had seen and done I was directed to go back forward and to inspect as I went. Going back forward I found a few more small cracks in the paint and scraped each one a little and found the previously mentioned conditions at each one. The plates, rivets and general condition of the bottom at each place I inspected was good.

DIVER: CRESSEY, O. R. 208 75 17, ML, DO

24 July 1947

Made dive on wreckage on starboard side of SARATOGA. I assisted No. 1 diver in pulling wire down while he tried to make it fast. I didn't get on top of the wreck but it appeared to have an inclined ramp up the side of it that was of quite heavy metal, about 1/2 in. Time ran out so we had to leave the wire partially secured and come back up.

DIVER: HESLOP, W. R. 238 83 78, BM2, DO

24 July 1947

Reached wreckage and it appeared to be small ship's bow. Took strain on 2 in. hand line until wire reached wreckage. Took eye of wire and took it on top of wreckage to find something solid to secure it to. Time ran out before wire could be secured.

DESCRIPTION OF WRECK: Had a small mat fender on bow. Solid piece about 2 in. thick and 2-1/2 ft. wide ran from about 2 ft. off top into the bottom at a 30° incline and attached to hull all the way; coaming about 1-1/2 in. wide around top of wreck with scupper slots in it. Remnants of hand rails and life lines around on deck. Wreck laying on even keel athwartship 5° slope aft.

DIVER: GAY, G. L. 283 36 58, MM1, DO

24 July 1947

I started down on a 2 in. manila line to the wreckage on starboard side of SARATOGA with instructions to shackle in end of 3/4 in. wire, which was already there, substantially enough to bring up part of the wreckage. I reached the bottom and followed the line to the wreckage. I could not find anything to secure the wire to as it seemed to be curved plating, so I climbed up on top and passed the wire under a steel ladder, a 3/4 in. pipe, a 1-1/4 in. pipe and a 2-1/2 in. pipe but I could not pull the wire through because the screw pin shackle hung up on the wreckage. I pulled the wire out and removed the shackle and moved the wire back under but I do not think I ran it under the ladder. The eye splice hung up so with the help of the other diver I pulled the hauling part up to the eye and shackled into it. I told topside to take a strain on the wire and after assuring myself it was secured, I was told to return to my descending line. While on the

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DIVER: GAY, G. L. 283 36 58, MM1, DO

24 July 1947

stage topside hauled in on the wire and told me they had retrieved a 3/4 in. piece of copper pipe and a piece of 2-1/2 in. pipe. I could not recognize the wreckage as any part of a carrier or LSM as visibility was only about 12 ft.

DRIVER: MULLEN, R. F. 201 61 73, CSF, DM

24 July 1947

I descended on the hand line to wreckage on the bottom and came to the wire and then passed the word to topside that I was going to inspect. I covered a large portion of the wreckage and came upon a horseshoe shaped pipe with asbestos and sheet metal covering. I told topside that I had found the place that the previous diver had spoken of and if I could not find a more suitable place I would secure the wire there. I went further and found a large piece of plate which I judge to be 10 lb. plate riveted together and the one edge buckled out to about 1/2 round but it appeared too large to try to lift with capstan. I also came upon a round object which had the appearance of either a wooden mast or a boat boom but I could not pass the wire around it and was then told that I had 4 min. more and I went back and secured the wire onto the pipe and reported I was not very confident that it would hold but I secured it anyway. I then left the wreckage and came up.

DIVER: PLEMEL, L. M. 328 35 47, CSF, DM

24 July 1947

Landed on bottom, went aft and got to the wreck. I started to pull the wire down. No. 2 diver did not get to me so I pulled it down alone. When I got the wire my time was almost up so I secured the line into the wreck. When I was at the wreck it looked like a bull nose or a chock in a bulkhead. I could not tell what the wreck was.

DIVER: WILKINSON, J. P. 658 38 06, SF1, DO

24 July 1947

Descended on starboard side, took light and hand line and went towards the ship bearing left. Didn't hit the ship but hit the wreckage. The wreckage was smooth plate, running down in the sand on the bottom part. I could not feel the top edge by reaching up as far as I could. I walked left along the wreckage until I came to a pile running up the plate. Started climbing up the pipe and found a loose piece of plate with some framing hooked to it. I pulled this piece clear of the wreck. I then went to the other diver and helped him pull down the wire strap. I held the strap until the other diver secured it to the wreck. I then came up. I did not have enough vision to look the wreck over. I could only see a dark outline.

DIVER: MOORE, W. M. Jr 371 96 58, BM1, DO

24 July 1947

Upon descending to the bottom, No. 2 diver and I proceeded to the wreckage carrying a hand line from topside. On reaching the wreckage I commenced to inspect it to find a hole or anything strong enough to pull or try to pull part of the wreckage from the bottom. I found a pipe soon after reaching the wreckage and secured the hand line to it. After securing the line I kept inspecting around the wreckage working to the inboard after side but upon being advised by topside that time was running short, I came back to the pipe which seemed fairly secure and No. 2 diver and I pulled the wire down to the wreckage and secured it to the pipe then we commenced ascent. The visibility on the bottom was zero and I believe we found the wreckage about midships on the outboard side. There seemed to be

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DIVER: MOORE (CONT'D)

6 or 8 ft. of smooth plating around the edge of the wreckage lying at about 15° angle. After walking up the plating the angle got much steeper and I slid back down, then commenced to search around the outboard edge and found the piping I tied into.

DIVER: BOSTWICK, E. E. 316 56 01, CFM, DO

25 July 1947

Went down as No. 1 diver and took camera with me. As soon as I got about 6 ft. from the wreckage I took a picture of the front of it. Then I took two pictures of the outboard edge, after that I took two pictures of the ladder going up the side. This wreckage was put together with small rivets and looked like part of a stack to me.

DIVER: PARK, H. E. 301 26 48, TM3, DO

25 July 1947

Upon reaching the bottom I followed the distance line out to the wreckage alongside of the SARATOGA, burned on a piece of plating with rivets in it and was continuing to burn the square out that a previous diver started but when I was short of cutting the square out by about 2-1/2 to 3 ft. my time on the bottom was up and I returned toward my descending line and left the bottom for the stage.

DIVER: GRIFFITHS, R. A. 376 53 72, GML, DO

26 July 1947

I left the surface and got to the bottom clear. I got to the wreck and crawled on top, it was like a pyramid at the top and I shot fifteen shots in a circle. Some shots twice. I was told to return to the descending line which I did and started up. The camera was taken up soon after I left the bottom. The rest of the dive was uneventful.

DIVER: WILKINSON, J. P. 658 38 06, SF1, DO

26 July 1947

Descended and went to wreckage on starboard side SARATOGA. Finished burning out plate in wreckage. Felt around inside of cut. Felt another plate underneath plate I was burning on. It was about 8 in. under top plate and running parallel with it. Didn't have time to investigate further. Didn't have enough vision to look wreck over.

DIVER: CRESSEY, O. R. 208 75 17, ML, DO

26 July 1947

I descended and followed the hand line out until I found the ground wire then I traced that to the wreck. The torch and ground wire were both in the hole where Denison had burned a section of plate. Topside said that the previous diver had been burning about 6 in. to the left and down from there, I felt carefully for the place where the burning had been done without any luck. I reached inside the hole and tried to feel some slag from burning but was unable to do so. I repeated the same on the right hand side of the hole but found nothing. On the way back to the descending line I brought the loads and they were taken up ahead of me.

DIVER: GAY, G. L. 283 36 58, MML, DO

28 July 1947

I left the surface with instructions to inspect the bottom and side of the SARATOGA and give information as to the position of descending line, visibility, contour of bottom and condition of hull. While descending I noticed that the descending line was about 40 ft. from the ship and couldn't see any superstructure

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DIVER: GAY, G. L. (CONT'D)

so assumed that the descending line was aft of it. I noticed that the safety nets were bent down. When I reached the bottom, visibility was very good ranging from 30 to 40 ft. except when sediment was stirred up. No current to speak of and bottom comparatively even. I waited for No. 2 diver and as soon as he had my line in hand, I started directly toward the ship. When I came within about 10 ft. of the hull I noticed that the plating was dented in about 10 to 12 in. The ocean floor curved sharply down about 6 in. from the hull and followed the contour of the hull to a depth of about 10 ft. The plating did not appear torn nor the seams cracked. Transverse frames and longitudinal frames appeared not to be bent. This I viewed from about 7 ft. from side of ship as I did not want to get into the crevices formed by the bottom as it would slow down my inspecting and I had to cover some distance forward yet. I started forward and the indentation in the hull became smaller and about 25 ft. from the first place (where the descending line was) the plating appeared in good condition. A little further forward I noticed a small piece of wreckage lying about 20 ft. from the hull. It was about 4 ft. by 2 ft. made of about 3/16 in. plating and very badly smashed. Further on, lying quite some distance from the hull, I noticed another piece of wreckage which appeared to be a plane but too far away to distinguish. Further forward I saw the wreckage that I had previously dived on when we were moored forward. It is definitely a smoke stack or the larger part of one as I could see about 30 ft. and it had catwalks on it plus steam lines and the general details of stack. I was about to climb over it when I was told to return to my descending line and to inspect as I came back. Coming back I did not notice anything that I have not previously mentioned. As I came to the small piece of wreckage I tried to break off a piece to bring up. The plating could be moved easily but I could not break it. I returned to my descending line and started up.

DIVER: HESLOP, W. R. 238 83 78, BM2, DO

28 July 1947

Photographed indented sections of hull on SARATOGA, starboard side.

A distance of 5 frames or 4 sections was caved in. The frames held their shape but the skin of the ship was pushed in as diagramed. Photographed from aft to forward getting two shots of each looking forward and next shot looking aft, last shot was taken down on last deformed port forward.

DIVER: GORING, Carl 321 22 31, CBM, DO

28 July 1947

Reached bottom, visibility 20 ft., went to wreck started forward to inspect damaged area other diver reported, went too far forward, started aft. Found damaged area. Took pictures of same; then counted vertical frames in damaged area; 9 frames, frames looked O.K., but plates were pushed in to a depth of about 3 in. Between vertical, and horizontal frames, I believe damage was in blister, not in regular hull of wreck. Tried to go under wreck but couldn't make it.

DIVER: PLEMEL, L. M. 328 35 47, CSF, DM

29 July 1947

Landed on bottom and went to the wreck. Came to the place where the plates are pushed in, went aft from there, could see about 15 to 20 ft. ahead of me. I could see up the side of the ship about 50 ft. After I went aft about 50 ft. I could see a discharge strainer. It was above the waterline. Went aft until I came to the No. 1 screw. One blade is above the bottom, the rest are buried. Above the screw is a sea chest. It is about 15 ft. off the bottom. I took pictures of this and also the No. 1 screw.

UNCLASSIFIED

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DIVER: WILKINSON, J. P. 658 38 06, SFL, DO

29 July 1947

Descended and landed at about frame No. 132, starboard side. Walked to edge of ditch which runs aft alongside the ship. Came to No. 1 screw. One blade of screw stuck up out of the sand, the rest of the screw was buried. Went down into the ditch at No. 1 screw going inboard. Ran into No. 3 shaft and followed it aft to the screw. One blade pointing up was broken off, the rest of the screw was buried in the sand. Walked inboard and hit a broken section which I thought was part of the rudder post. It was broken at the top and mostly covered with sand. Took two pictures of this section. Investigating further, I decided this was part of a screw instead of the rudder section. Did not have time to investigate further. Visibility was about 4 ft. around the screws. I did not come in contact with or see any part of the hull while investigating the screws.

DIVER: COKER, C. W. 269 55 87, COX, DT

29 July 1947

Landed aft where the twin mount used to be, by frame No. 138. Went forward to frame No. 124 and found that the deck was caved all the way in. Seemed that the deck was buckled about amidships and from starboard to port. From the hole there seemed to be a steep incline all the way to port side. Saw a big box-like frame on the top of the incline but couldn't make out what it was. Came down and took a series of pictures looking from aft to forward. I then took some pictures coming back from port to starboard. Came back, got the other camera and saw that the deck started to split around frame No. 130 and kept going until it reached the hole on the starboard side. I went along the inboard side of the deck house and noted that in the bulkheads were quite a few dents. I came to the stack where it was blown across the deck to port. I then got at the hole and took pictures looking from forward aft. Where the stack was damaged was about frame No. 118-116. Came back to descending line.

DIVER: MOORE, W. M. Jr. 371 96 58, BML, DO

29 July 1947

Upon reaching the bottom I proceeded to the wreck with No. 2 diver tending my lines from 50 ft. back. Walking aft I inspected the bottom and side. Visibility was very good and I could see up far enough to see where the blister and the side came together and were secured. There was no damage to it as far as I could see. I came to the No. 1 propeller and took pictures of the top blade which had been sheared off. I took 3 pictures, one of a broad view and one each of the corners. Continuing on aft, I was looking at No. 3 shaft and the bottom when I noticed many wires of a large diameter running from over me down to the bottom. This wire was approximately 2-1/2 in. and some 3-1/2 in. Looking outboard I saw what appeared to me to be a large reel that had many wires or lines running from it. I was standing quite some distance from this object but it looked to be about 10 ft. in diameter and 25 ft. high and I could never clearly make out exactly what it was, though it appeared to be upright. Going on aft I came to the No. 3 propeller and started aft of it to go down and inspect the rudder but ran into wires so I came back forward of No. 3 propeller and started down there. I figured I was clear of the propeller and started on working down and aft when I ran into more wire. Topside then ordered me back to my descending line.

The stern is lying in a trough some 20 to 30 ft. deep and the sides of this trough are fairly steep. Going down in the trough, a diver loses what visibility he has.

The part of the side and bottom I saw appeared to be in good shape with no damage to rivets, plates and contour of the ship, though at one place along No. 1 shaft I thought I glimpsed light underneath the ship.

- 195 -

UNCLASSIFIED

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DIVER: CRESSEY, O. R. 208 75 17, M1, DO

29 July 1947

I descended onto the flight deck of the SARATOGA for the purpose of taking pictures. I worked my way aft to where the other set of divers had left off and took pictures as I went aft. The hole that was amidships tapered down as it went aft. It ended approximately opposite the quad 40mm. mount and from there the flight deck was bent at an angle of about 15 or 20°. I didn't go any further aft. The aft end of the flight deck was buckled in up to the second port. From there forward it was in good shape until it reached a watertight door with a passing scuttle in it. From there forward and across the front of it, it appeared to be badly buckled with a lot of wreckage piled up around it. I stood on the trainer seat on the quad 40 there and took a series of pictures around me. The wreckage seemed to consist mostly of 1/8 in. metal. Some of the wreckage was hanging over the side forward of me. A large section of the deck forward and amidships of the deckhouse was ripped up to an angle of about 45°.

DIVER: GOLDSMITH, W. E. 626 24 30, GM2, DO

30 July 1947

Landed on flight deck. Visibility about 20 to 30 ft. Tending No. 1 diver, walling aft. Flight deck was caved in about 5 ft. away from port side of descending line. It appears to slope down to a depth of about 10 ft. I couldn't see port side of cave in. Walked aft till I came to where flight deck is crushed in athwartships. It slopes down to a depth of about 15 to 20 ft. and is about 60 ft. across the top looking fore and aft. I tended No. 1 diver from forward edge of this cave in. On return to descending line, I saw a 5"/38 cal. gun on catwalk below flight deck. Gun appeared to be in good shape.

DIVER: BOSTWICK, E. E. 316 56 01, CEM, DO

30 July 1947

Went down as diver No. 1. Landed on flight deck and waited for No. 2 diver. Gave No. 2 diver my lifeline and started aft on starboard side. Started taking pictures where deck started sloping aft running aft athwartships. This slope started down at a 20° angle right about the quad 40mm. gun mount. It seemed to be about 60 ft. wide and 10 ft. deep at the deepest part. It started coming back up about 6 ft. from the aftermost part of the flight deck. Took pictures at all angles of this incline in deck, and also split in deck which was about the center of flight deck. About 20 ft. aft of the 40mm. there was a large cargo hatch, or elevator, laying on deck. It looked to be about 30 ft. by 40 ft. I also took three pictures of this elevator. Returned to my descending line and started up.

DIVER: FREITAS, J. D. 375 90 05, CMN, DT

30 July 1947

I descended to the flight deck of the SARATOGA. There I found the descending weight in the catwalk on the starboard side. I climbed up to and on the flight deck and waited for No. 2 diver to reach bottom to assist in making the descending line fast to the flight deck. After getting descending line squared away, I picked the camera up and proceeded forward on the starboard side. I noticed, looking to port from the descending line, that the flight deck seems to rise just a bit, then abruptly falls further than I could see.

Proceeding forward on the starboard side past the deckhouse where I came to a quad 40mm. mount. Looking to port the stack was all caved in and pushed over with a very large rip in the shape of a V running from deck to as far as I could see. I took pictures of this and surrounding area including 40mm. mount.

Just within my vision rising straight up in middle of stack there seemed to be a large plate standing on edge, above this plate I could see a large ventilator

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facing aft though I couldn't see what it was mounted on. I proceeded around No. 13 40mm. and there hanging over the side the No. 13 40mm. director tub empty. There was wreckage all over the passage and to go further forward on that side the diver will have to go on top of wreckage. I returned to my descending line and ascended.

DIVER: GORING, Carl, 321 22 31, CBM, DO

30 July 1947

Taking pictures on starboard side of island on flight deck of SARATOGA.

After reaching bottom, found where both descending lines were secured then went forward with No. 2 diver tending me. Found 40mm. gun mount, no damage to it, or gun tub. Wreckage was very bad in this area, with what I think to be parts of stack, took pictures of wreckage, also of 2 uptakes, went back to descending line, for another camera, then went forward again to take more pictures. Took some more pictures of No. 1 uptake, and wreckage of stack, went on forward, reached quarterdeck, could see gangway still rigged, didn't seem to be damaged, took a picture of a large piece of wreckage. Couldn't make it out, but thought it to be blower from one of the uptakes, could see 40mm. gun mount on forward side of stack, took last picture of wreckage of catwalk running between stack, and bridge, returned to my descending line, and came up to first stage.

DIVER: GAY, G. L. 285 36 58, MML, DO

30 July 1947

I descended with camera with instructions to go down after accommodation ladder and inspect and take pictures of blister from bottom of accommodation ladder aft. I reached flight deck about 8 ft. inboard on starboard side and about 30 ft. aft of accommodation ladder. Waited for my tender and then went to ladder and started down. Ladder was in fairly good shape with hand rails only slightly bent. When I reached the bottom of the ladder, the blister was about 5 ft. further down, so I jumped down on the blister and ducked under the ladder and swung over to a piece of 14 in. pipe that was sticking out of the hull at about 4 1/2 ft. above the blister. I took pictures here of the blister and the blister was badly crushed. The entire length of the side that I covered except when I came to manhole covers and in these places it was not quite as badly crushed. Quite some distance from the bottom of the accommodation ladder I came to a sea ladder and went down over the side about 6 ft. to look at the side of the blister and found it damaged as far forward and aft as I could see. I had about 12 ft. visibility. A few feet aft of the sea ladder I came to two places where the plating was separated from the hull, the first one being about 4 ft. long and the second about 3 ft. long. I went aft to the third manhole and as far aft as I could see the blister was still smashed as described before. I took pictures as far as the third manhole. Running above my head parallel to the blister was a 4 in. pipe and about even with my head was a jackstay or hand rail. I found no port holes but found places where there had been some welded up. The hull above the blister seemed to be in reasonably good shape and showed no damage.

DIVER: JAROSZ, W. P. 207 24 97, CSF, DO

30 July 1947

Landed on flight deck of SARATOGA. Started forward to the accommodation ladder. Flight deck sprung up about 30 ft. from starboard side of ship near accommodation ladder tending to port side as far as I could see. Visibility was about 30 ft.

DIVER: PLEMEL, L. M. 328 35 47, CSF, DO

30 July 1947

Landed just outboard of the after 5 inch-gun mount, starboard side. Went forward past the deckhouse, got to the 40mm. gun mount. Gun is in good condition

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DIVER: PLEMEL, L. M. (CONT'D)

except for a lot of wreckage scattered over and around it. I went through that wreckage going forward. I came out of that wreckage at about 20 ft. from the forward gangway. I had a lot of trouble getting slack, my hose kept fouling on the wreckage. Just forward of the gangway is a set of bitts and that used to be the quarterdeck. I saw a board on the bulkhead there that still had the names of the officers on it. Right forward of that, the flight deck looked to me like it was broken and the forward section of it listed up at about 15°. I took a few pictures but the camera did not work. Also standing just aft of the deckhouse looking forward, I could see that the deckhouse was listed aft instead of standing straight up and making a 90° angle with the deck.

DIVER: GRIFFITHS, R. A. 376 53 72, GML, DO

31 July 1947

The descending line and weight were halfway down a 45° incline or break in the flight deck. This break runs fore and aft along the flight deck on the port side. At the bottom of the hole, some 50 ft. inboard from the port side of the flight deck was an iron frame work. This frame work looked flat to me, and in good condition. I was looking at it from approximately 30 ft. away. The splits or breaks in the flight deck planking were numerous and quite jagged. The splits or breaks were across the grain of the deck planking. The splits or breaks in the flight deck planking were not only in a fairly straight line at the top, but also broken irregularly down the incline. I dragged the weight and descending line to the level part of the flight deck and secured the descending line to a life stanchion. This was on the port side of the ship and distance between the edge of the flight deck and the start of the incline or hole is about 20 ft.

DIVER: SCHNEPF, R. J. 621 10, 20, GM2, DO

31 July 1947

Upon reaching the bottom I found the descending line weight to be resting on an incline extending fore and aft as far as I could see, visibility being about 50 ft. The incline began at the arresting cable blocks and angled downward and inboard at about 45° for about 20 ft. where the flight deck became level again. I proceeded to the top of the incline and assisted No. 2 diver in hauling the descending line and weight to the outboard edge of the flight deck where he secured a bight of the line to a stanchion on the flight deck just above an empty fire control tub and short catwalk. The flight deck at this point was considerably cracked up and just aft of the descending line a section about 30 ft. across and I don't know how long with very irregular and jagged edges were torn up with the edge of the torn piece resting on the remainder of the flight deck. At both the upper and lower edges of the incline the planking was snapped square across the grain with the jagged edges protruding upwards.

DIVER: WILKINSON, J. P. 658 38 06, SF1, DO

31 July 1947

Descended and walked forward on port side. Inspecting hull as I went. Saw no damage to hull. Saw no wreckage alongside of ship. Went forward until I came to Moore's name written on the hull, then came back and returned to descending line. Visibility on bottom was about 10 feet. The area I inspected was the port quarter.

DIVER: MULLEN, R. F. 201 61 73, DM

31 July 1947

I reached bottom and waited for diver No. 2 to take my lifeline and camera. I went into the ship and went aft. Visibility about 5 ft. I went aft, alongside

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DIVER: MULLEN, R. F. (CONT'D)

of ship at top of trench that runs along under the hull. I came upon an object extending from the hull and took a picture. I then examined it and it had a large lifting ring on it. I would judge it to be about 12 in. diameter and about 2-1/2 in. thick. I figured it to be a shaft strut. I then went aft along the hull until I hit a shaft. I was then told to follow the shaft bearing where it appeared to be split. I then went on to the propeller, and examined one blade which seemed to be undamaged. I then came back to my descending line and came up.

DIVER: BOSTWICK, E. E. 316 56 01, CHM, DO

31 July 1947

Went down as No. 2 diver to take pictures of after part of flight deck. Reached bottom gave No. 1 diver my life line and air hose and started walking aft on the port side. Took pictures of the deck where it started sloping aft. Also took pictures of where the deck sloped from port to starboard. After I got to end of flight deck I started back taking pictures of the large crack that was in the center of the flight deck. The crack is a good 4 ft. wide and about 70 ft. long. The deck slopes toward the crack at about 30° angle (from port to starboard). The crack runs along the centerline of the ship.

DIVER: MOORE, W. M. Jr. 371 96 58, BML, DO

31 July 1947

On reaching the bottom, No. 2 diver and I proceeded to the wreck. Visibility was very poor and upon reaching the No. 2 and No. 4 shafts, and propellers, which are slightly under the ship, visibility was almost zero. The struts seemed to be in good condition. I could not see the bearings well enough to determine their condition. The top blades seem all right except for barnacles and sea growth. The side of the ship which I felt as I went along seemed in good condition. The ocean bottom seemed more even than it had forward and was harder.

DIVER: PLEMEL, L. M. 328 35 47, CSF, DM

1 August 1947

Landed on port side aft and started going forward on the port side. When I came to the elevator I went across the deck to the starboard side and came to the deck house. I took a good look there while No. 2 diver was clearing my lines. The flight deck is broken or bent up about 15° from these forward. I took a good look at the deck house there and the bounding bar does not make a 90° angle. Looking up the deck house I could see that it did not go straight up. It lists aft. From there I went to the forward gangway. As I went down the gangway and came to the first platform the bulkhead was pushed in there. In the center of the deck there is a glass port (dogged down) it was not broken so I decided that I better make sure of the dent because I thought the port should be cracked or broken. I put my head against the side and looked aft. The side was dished in. Going down to the blister from there the handrail on the inboard side was gone. When I got to the blister I could not see anything wrong with it. Forward of the gangway where was a big pipe going into the blister (about 16 or 18 in. pipe). It was also in good shape. It looked like heavy duty piping. Above the blister there was a pipe running fore and aft size of that was about 2 in., above that was another pipe size about 4 or 5 in. Time was up, I was told to return to my descending line and come up.

DIVER: DENISON, H. D. Jr. 283 15 91 CHM, DM

1 August 1947

I landed at the port quarter of the SARATOGA on the bottom near No. 2 propeller with the camera. While the other diver tended me, I worked aft took pictures

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DIVER: DENISON, H. D. JR (CONT'D)

of No. 2 shaft and struts. Went on aft on No. 4 shaft and propeller and took pictures. Noted no damage. Went on aft to the rudder and took pictures of it at different angles. No damage. Returned to the descending line and came up.

DIVER: MOON, F. T. 239 00 17, S1, DT

1 August 1947

Landed on SARATOGA at frame No. 163 on port side, 12 ft. from 5"/38 cal. single mounts No. 9. There is an incline in the flight deck that starts at about 2 ft. inboard of the port side. The incline is at about 8° for about 10 to 15 ft. from port side, then breaks and tends at a straight up and down angle, the incline is about 35 ft. deep, this rupture leads aft about 50 ft. Then from there it is split, the split is about 70 ft. long and has a 40° angle until it reached the belly of the rupture. I tended No. 1 diver while taking pictures then returned to my descending line.

DIVER: COKER, C. W. 269 55 87, COX, DT

1 August 1947

Landed on port side and secured the descending line about 20 ft. forward of gun tub. I then took the camera and walked aft to where a big crack was down amidship about 4 ft wide. I started taking pictures about half the center of the crack and walked forward. I took a series of pictures, one after the other until the camera was empty and then came around the blast gage tower back to the descending line. I got a new camera and took up where I left off. I came to a place where the crack widened out in both directions making the crack about 20 ft. wide. It was an incline that came down on both sides of the deck to meet at this deep ditch like crack. I noticed that the boards were on end in many places and by all reckoning it was buckled. I finished the pictures forward of where crack widens on port side.

DIVER: PRICE, J. F. Jr. 295 26 50, CBM, DO

1 August 1947

I was No. 1 diver, I was to take pictures of the shaft, screws and rudder, but found after I got down in the holes where they were, it was too dark for the camera for it was set for 6 or 8 ft. and you could only see about 2 ft, so I went on as an inspection dive. Going aft, I passed the first screw outboard then got on the shaft of the other screw and was going aft to the other screw and rudder when my life line got fouled. I was almost to the second screw when this happened. By that time, I was told to come up.

DIVER: FREITAS, J. D. 375 90 05, CMN, DT

1 August 1947

I descended to the flight deck of the SARATOGA as No. 2 diver to tend the air hose and life line of No. 1 diver, while he made an inspection of the port side of the flight deck aft. All I saw was that the flight deck sloped to the center about 30° and the crack there at the part where I was standing was about 3 ft. wide or a little more. The deck begins its sag at the waterway and slopes to the center.

DIVER: O'DONNELL, J. F. 650 04 04, SM2, DT

2 August 1947

Left descending line port side of flight deck, went forward tending No. 1 diver. Large hole in deck about 20 ft. from edge of flight deck. Ribs coming out of deck were bent. Tending No. 1 diver who was kicking up sea dust.

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DIVER: L'HEUREUX, E. A. 212 68 48, BM1, DS

2 August 1947

Descended port side of SARATOGA to take pictures of crack in flight deck. Took pictures of crease and crack of flight deck from the distance of 40 ft. Army field gun was located on port side which seemed to be in bad condition. Tracks from tires of trucks were molded on flight deck. Pipes which possibly were life net racks were bent over and almost laying flat on deck. Also noticed 5"/38 cal. gun on the port side which seemed to be in fair condition.

DIVER: BOSTWICK, E. E. 316 56 01, CFM, DO

2 August 1947

Went down as No. 2 diver. Took camera with me to take pictures. Reached top flight deck and gave No. 1 diver my lifeline and air hose; started walking aft. Reached break in deck where it dropped down 3 ft. incline slanting aft. Went overside in the life nets right abreast the break in deck, looked down on the main deck and saw where a door was torn off frame No. 192-1/2 and the shell was split above and below the door. The forward part of the bulkhead was also pushed in. Went down on the main deck and took pictures where the door was torn off and also the split in the shell. Went under the lifelines on the main deck and looked over the side. The side had a large dent in it extending down about 15 ft. The dent was about 4 ft. wide and 1 ft. deep. Came back under the lifeline and went into the compartment where the door had been torn off. Examined the overhead and beams in the compartment and couldn't see any break in them. Read the frame number which was above the door on the inboard bulkhead of the compartment. The frame number was No. 192. Came back out of the compartment and took pictures above the crack where the flight deck was buckled back, also took a couple of pictures where the deck of the half deck was broken and slanted aft. Came back up to top of flight deck and went over to starboard side. Went over the side between the life nets and flight deck. Went down on the main deck and took pictures of the crack alongside the door that had been pushed in. Was told to return to my descending line and stand by to come up.

DIVER: MOORE, C. B. 337 30 67, CPHM, DO

2 August 1947

At approximately frame No. 190, just aft of the blast gage tower, the flight deck is sunken. The steel structure along the edge of the flight deck at this point is twisted in an "S" shape over a distance of 3 ft. horizontally.

The safety net in that area is torn and twisted and in a horizontal position.

When crossing the flight deck I came to a sunken and wide crack running fore and aft. The crack seemed to be about 2-1/2 ft. in width, sunken about 3 to 4 ft. The deck is splintered badly along the crack, also where the deck is caved in athwartship.

DIVER: MILLER, F. F. 372 28 25, BM2, DO

2 August 1947

I descended and helped No. 1 diver move the descending line, to move it from the port to starboard side, we had to cross a hole in the flight deck about 10 ft. deep and 45 to 50 ft. wide. After securing the descending line we started aft. After 40 or 50 ft. we found another hole and started to cross it, but No. 1 lifeline and air hose was fouled and I had to go back and clear it. It was fouled on some of the deck where it was buckled up. The wood on the flight deck was splintered. Then No. 1 came back where I was and started to go over the side by a quad 40mm. gun but he came back up and we returned to the descending line and came up.

- 201 -
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DIVER: MOORE, W. M. Jr. 371 96 58, BM1, DO

2 August 1947

After reaching the flight deck, No. 2 diver and I changed the securing place for the descending weight from the port to the starboard side.

Going aft to find a place to descend to the next deck, I took one picture of the edge of the flight deck where it was pushed up about 18 in. to 2 ft. I then went back forward and started down. I landed just forward of a 40mm. director tub, in the after side of a 40mm. quad mount. I could not get any slack in my lines and stayed there for a minute or so. While there, I noticed that just aft of the tub a large chain (3 to 3 1/2 in) and a large wire (2 to 2-1/2 in) extended up above the flight deck.

Topside then told me to return to my descending line.

DIVER: GOLDSMITH, W. E. 626 24 30, CM2, DO

2 August 1947

Landed on bottom, visibility about 30 ft. Started tending No. 1 diver walking toward starboard side of SARATOGA. Walked to outboard edge of trench along side of ship and tended No. 1 diver from there. I couldn't see No. 1 screw from here because of silt stirred up by No. 1 diver. As No. 1 diver walked aft I walked aft along outboard edge of trench observing the hull as I walked. I could see up the side of the hull for about 20 ft, from this distance, hull appeared to be in good shape. I walked aft till I came to what I judge to be No. 3 screw. Sand was piled up around it until only about 6 to 8 ft. of the top blade was visible. This was all observed from the starboard side of the screw. I didn't see any of the shaft or strut. A little forward of No. 3 screw looking aft, the blade appeared to be about 10 to 12 ft. in diameter. No. 1 diver returned and we both returned to the descending line.

DIVER: GORING, Carl, 321 22 31, CBM, DO

2 August 1947

Diving on U.S.S. SARATOGA to take pictures and inspect screws, shafts and struts.

Left surface, reached bottom. Visibility very good 50 ft. at descending weight. Started for wreck with No. 1 diver acting as my tender. Reached wreck, went down incline 30°, found screw. Could see one blade and part of another, took pictures of same, started forward following shaft to find strut, but missed it. Found where shaft entered hull. Casing around shaft where same entered hull was cracked from after end all the way to the hull, crack also extended up the side of hull several feet. Took pictures, started aft again looking for strut, found where it was broken off even where it is secured to bearing. Couldn't take any more pictures because of silt in water, also found where same strut was broken off up close to hull, distance from hull 6 in. on after edge of strut; 8 in. forward edge of strut. Took several pictures of same. I believed this screw to be No. 1 so I started on aft looking for No. 3 screw. Went further down under ship and aft. Visibility very poor here, about 3 ft. Going aft with right hand on ship I missed No. 3 screw and rudder, felt contour of ship starting to go up, was told to return to my descending line. I passed by screw I believed to be No. 1 screw again, came up to first stage.

DIVER: HUGHES, G. T. 970 03 20, MCM2, DT

2 August 1947

Descended to starboard side of flight deck. The purpose of the dive was to inspect the starboard side at frame No. 188 to frame No. 198 at the deck for possible fracture. Reached the bottom and took No. 1 diver's lifeline and air hose

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DIVER: HUGHES, G. T. (CONT'D)

and camera in hand and tended him as we went aft on starboard side at the edge of flight deck. Approximately 30 ft. aft of descending line we came to an incline in the deck at an angle of about 30° for 15 ft. with quite a few of the deck boards busted and splintered ends sticking up.

DIVER: GAY, G. L. 283 36 58, MML, DO

2 August 1947

I descended to SARATOGA flight deck with instructions to photograph and examine starboard side between frames No. 189 to No. 197, main deck, and to enter crews washroom door at frame No. 193 and inspect overhead and deck of washroom. I landed on flight deck at about frame No. 185 starboard side and waited for my tender. I noticed that about 15 ft. inboard from where I was standing the deck was sunk in as previously reported. My tender and I started aft and at about frame No. 188 the deck slanted down at about 30° to a depth of about 6 ft. The planking was broken and splintered. As I went aft I looked from 20mm. guns over side and when I saw them I decided to go aft more to make sure that this was the correct place to start over the side. In the bottom of this dip in the deck at about frame No. 198 there was a piece of steel structure laying in the deck. I reported it to topside and they said it was part of the elevator and had been previously reported. So I continued aft and the deck went up at about 30° for about 6 ft. at about frame No. 192. I continued aft until I came to the end of the flight deck and then returned to my tender who was standing at frame No. 197. I looked over the side and could see the closed chock on half deck at frame No. 195. Slightly forward of where I was standing was a 2-1/4 in. wire tending straight up from edge of flight deck with a strain on it apparently to a surface buoy. With the camera and my tender tending me I descended over the side on the 2-1/4 in. wire just forward of the 20mm. gun tub at about frame No. 196 and when I was even with the half deck I pulled myself inboard to the deck by some fire hose that was hanging over the side. I stood at the closed chock facing forward and looked at the deck and bulkheads and was amazed at the way the deck and shell were damaged. The deck I was standing on seemed to be pushed down about 4 to 4 1/2 ft. of the deck ahead of me because as I looked forward I could see the deck slope up at a sharp angle to a height of about 4 ft. higher from where I was standing. This slope was about frame No. 191. The shell was pushed in at frame No. 191-1/2 and the door was mangled. The pushed in place was very angular and sharp with the door in the middle of the crease. It was impossible to open the door also from the place I was standing at the closed chock the bottom of the door was about 4 ft. from the deck. Directly beneath the doorway and slightly forward there was a hole about 2-1/2 ft. high from the deck and about 3 ft. wide at the widest part, shaped like a triangle. The life nets were hanging over the side and some 4 in. manila. The lifeline stanchions were broken and the chains loose. I took pictures of the deck looking forward from the chock and pictures of the bulkheads from bottom to top. I could not go into the washroom so I went over the side at the closed chock on a piece of 2-1/4 in. wire. Just below the chock I noticed what appeared to be a piece of torn plating sticking out from the hull but later on my way up it looked like a long sheet of paint hanging from the side. I went down the wire about 6 ft. and the hull was curved way in and as I looked up there was a closed port hole facing me. I took a picture here and then went down the wire a few more feet. At the point I was quite some distance from the hull and could not make out the details of the hull but could just see the outline. I could see dark spots a little below on the hull but I could not determine if they were holes or places where paint was missing. I took pictures of this and then was told to return to the flight deck. I returned to the flight deck and my tender and I started back to our descending line and back to the surface.

- 203 -

UNCLASSIFIED

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DIVER: GAY (CONT'D)

As I made out the report I noticed on the general plans that what I have been calling the "half deck" is actually the "main deck".

DIVER: SCHNEPF, R. J. 621 10 20, GM2, DO

2 August 1947

When I reached bottom I took No. 1 diver's lifeline and air hose and the camera cable in hand and followed him at a distance of about 5 ft. to the wreck. No. 1 diver went down into the gully around the screws and I followed him passing over where the upper strut of No. 1 screw was broken off level with the bottom. When I reached a point about even with and inboard of No. 1 screw I stopped and tended No. 1 diver from there. When I was told to back off and look up at the hull I was unable to distinguish anything because of the muck stirred up by the dragging of the lifeline and air hose to No. 1 diver.

DIVER: WILKINSON, J. P. 658 38, 06, SF1, DO

2 August 1947

Descended on starboard quarter. Came to the ship about 15 ft. aft of where No. 1 shaft comes out of the ship. Inspected forward on No. 1 shaft. Took a series of pictures of this crack. Vision was good until it clouded up. Went aft on the shaft but had no visibility. Felt some sort of crack on strut bearing casing. Did not find out whether strut was broken off or not. Went into No. 3 shaft casing and No. 3 was broken about the same as on No. 1 in addition the bracket from the casing to the ship was broken. Took a series of pictures of this section. Went aft on No. 3 to strut bearing casing. The top strut was broken off at the casing. Could not see the hull or any part of the strut extending from the hull. The screws on both shafts were not broken as far as I could determine. Went inboard and aft and hit the rudder. Had no visibility here. Could see no damage to rudder. Went up the bank and aft. Took a picture of the hull and rudder about 10 ft. forward of the stern.

DIVER: GRIFFITHS, R. A. 376 53 72, GM1, DO

2 August 1947

About 30 ft. aft from the descending line, where No. 1 diver went over the side of the flight deck, there are several nets here and they are bent over the side. Just forward of this spot is where the flight deck is pushed down. From the level part of the flight deck it slopes down at about 25°, and drops about 10 ft. No. 1 diver went over just forward of a bank of 20mm. guns. There is a 2-1/2 in. wire cable coming up and going straight on above the flight deck, but outboard of it. About 10 or 12 ft. forward of this is another 2-1/2 in. wire cable. It also goes up above the flight deck, but outboard of the starboard side. I tended No. 1 diver from the after part of the landing nets. The flight deck planking was broken irregularly as it came down the slope. The planking runs athwartships. The forward 20 mm. is trained inboard and has only one splinter shield instead of two. The after one was gone. Then both divers returned to the descending line.

DIVER: CRESSEY, O. R. 208 75 17, M1, DO

2 August 1947

I descended to the flight deck starboard side of the SARATOGA and went aft to about frame No. 196. There I went down to the main deck and took pictures of damage. The water tight door at about frame No. 192-1/2 was badly warped and the lower casing to the deck was completely ripped away leaving a hole about the width of the door and down to the deck. At frame No. 192 there was an abrupt break in the deck. The after section being down between 2 and 3 ft. I got 2 pictures of the break. One looking forward at about the level with the main deck and the other one from the closed chock with the camera held outboard at about a 45° angle.

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DIVER: CRESSEY, O. R. (CONT'D)

I took 2 pictures of a rack of foamite cans that was on the bulkhead just forward of the damage. They were only slightly damaged. After that I went over the side and took some pictures of the hull. If the hull was dished in any it was so evenly dished that it would be hard to tell how much. The ports there were looking down at about a 45° angle. What appeared to be a vertical split in the hull below one of the ports turned out to be just where paint had blistered and split. Further down there was a dark spot on the hull but because of visibility I could not determine whether it was a hole or more peeled paint. What the previous divers reported to look like a tear just aft of the closed chock was where more paint had peeled. No. 2 diver then pulled me up onto the flight deck and we returned to the descending line and started back up.

DIVER: MULLEN, R. F. 201 61 73, CSF, DM

3 August 1947

I landed on flight deck at the concaved portion. Waited for No. 2 diver to reach bottom, when he did, we both went over to ladder leading down to the gun deck. I then went down to the gun deck and pulled some slack down, No. 2 followed and tended me. I tried to undog one door at frame No. 176 but could not undog it. I then went back and got the dog wrench topside had sent down. I got the dog off but both divers could not open the door. Topside then told me to go forward to a door at frame No. 169. There were no dogs on it but it was blown out all around the door except the center. All around the outside of the coaming the shell was blown and warped. I took two pictures of this. Topside said that we were to go to topside on the flight deck. We did this and I went down into the dished in part of the flight deck. Visibility was about 30 ft. and as far forward as I could see the deck was blown down. I would judge the dish was about 50 ft. wide and I went over 5 athwartship wires and still was far from the other end of the dished in space. I then came back to my descending line and came up.

DIVER: HESLOP, W. R. 238 83 78, BM2, DO

3 August 1947

Tended No. 1 diver while he went under counter on starboard side and aft to the rudder. Tended him from aft No. 1 screw. Tried to look up at counter but didn't have time to see much of it. Did observe that the blade of the visible screw was turned to right angles at the bottom and about 1 ft. wide. Aside from that and glimpses of the hull, I didn't see anything.

DIVER: DENISON, H. D. Jr. 283 15 91, CEM, DM

3 August 1947

I landed outboard No. 1 shaft. While the other diver tended me I started aft. I came alongside at the stern tube of No. 3 shaft. A 2-1/2 in. chain leads under the shaft at that point. About 12 ft. of shaft casing is broken from the bearing aft. At the after end of No. 3 shaft the horizontal strut is broken off near the shaft. I walked aft and inboard to the rudder, noted no damage. I started back forward. I walked outboard No. 3 shaft and inboard No. 1. I inspected No. 1 shaft from the stern tube bearing to the propeller. The screw is covered with sand except the upper blade. I did not see the strut. I took pictures of the damage on No. 3 shaft and also of No. 1 propeller. There is a large buoy outboard No. 3 screw and chain and wire. I returned to the descending line and came up. The stern tube bearing is broken.

DIVER: MOON, F. T. 239 00 17, S1, DT

3 August 1947

Landed on flight deck of SARATOGA at frame No. 102. Inboard of the port side about 8 ft. there is an incline that has a 40° slant and is about 25 ft. deep. Ten ft. from where the incline starts there is a crack 12 in. wide and another at the

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DIVER: MOON, F. T. (CONT'D)

bottom of the incline that is 4 ft. wide. Both cracks tend aft as far as I went and could see. I estimate about 15 ft. long. There were truck tire tracks in the flight deck, and can be seen very plainly. I tended No. 1 diver as he tried to open a door in which to inspect inside the hangar deck, but, because of such a suction, he was prevented from doing so. This took place on port side at frame No. 166 on next deck down from flight deck. We returned to the flight deck and searched for a hole big enough for a diver to get through to next deck, but splinters prevented this so we then returned to our descending line.

DIVER: PRICE, J. F. JR. 295 26 50, CEM, DO

3 August 1947

I was No. 1 diver. As soon as No. 2 got on the deck, we started over to the port side and went forward to frame No. 160 on flight deck, then had to go back until I came to a ladder going down to the 5 inch-gun, main deck, then went back to frame No. 160. I could see very good. The water tight door at frame No. 160 was gone, so I went in. The door at frame No. 155, forward bulkhead, was sprung and cracked. The bulkhead was also cracked at the top of the door on the left hand side. I thought I could get through the door but couldn't get my helmet through. When I first went into this compartment, (C-206-T), I could see good, but as I moved around it started getting cloudy. I then went to water tight door, (frame No. 159 inboard bulkhead), took the dogs off but the door would only spring open a little, then close, so the door or the bulkhead or both were sprung but I could see no cracks in either. I tried the hatch going to C-0104-T but they were both dogged down with 12 or 14 dogs, and I had no dog wrench. This hatch goes to C-0104-T hangar deck. The scuttle at frame No. 155 1/2 was in good condition.

DIVER: PLEMEL, L. M. 328 35 47, CSF, DM

3 August 1947

Landed on the starboard side aft then I went to the wreck and started going forward about 100 ft. There was a fire hose hanging down and a couple of lines and also a wire strap. Also there were a lot of pieces of wreckage on the bottom. I couldn't make out what it all was except for a guard rail about 15 or 20 ft. long. From there I turned around and went aft. I could not see over 4 or 5 ft. When I thought I came aft far enough to get to the screws I went down the hull. I came to a shaft and screw I could not tell at that time which screw it was. Standing on the shaft I could see the outline of another screw blade then I knew I was on No. 3 or the after one. I felt a plate that was pushed out of the hull about 1 in. I took a picture of it and kept feeling all around the plate. The lower and upper side of the plate are pushed out and also the forward end. The end of the plate makes two 45° angles. From there I wanted to get to the forward screw to see if the strut was broken off. I never did find it and I believe it is gone. No. 3 shaft is bent outboard. It does not point straight aft.

DIVER: MOORE, W. M. Jr. 371 96 58, EMI, DO

4 August 1947

After the descent to the flight deck, No. 2 diver and I proceeded to the edge of the flight deck, starboard side, to frame No. 153. At that point I went over the side of the flight deck to the catwalk that is about 3 ft. below the level of the flight deck. This walk is about 4 ft. in width. There I found the hull damaged. It was blown outward about 6 to 8 in. and ran vertically along a line of rivets. These rivets were at frame No. 153. The plating around the rivets were badly cracked though the rivets themselves seemed alright. This damage ran from the flight deck down to where the hull ended at the gun platform, a distance of about 7 ft. I took two(2) pictures of this damage, one just above the catwalk looking from forward to aft, and one below the walk from directly outboard.

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DIVER: MOORE, W. M. Jr. (CONT'D)

I then descended to the bottom of the gun platform. The deck of this platform is the upper half deck and the platform is about 60 ft. long, running from frame No. 155 to frame No. 140. The outboard edge of the platform has a lifeline of heavy angle iron, possibly 2-1/2 in. At the after end of the pocket this lifeline is torn loose, but it is stable and in an upright position. It is about 4-1/2 ft. high. I then examined the 40mm. ready service locker and found it badly damaged. The ready service locker runs from frame No. 145 to frame No. 151, is about 8 ft. high and 6 to 7 ft. in width. The after door is blown out and the whole locker squeezed in. The outboard bulkhead of the locker is pushed in and the indentation is equal from top to bottom with the middle being the deepest part. It is out of line about 8 in. The forward door is blown in and just above the door the bulkhead is split from the top of the locker to the top of the door. The split is about 18 in. to 2 ft. long and about 1 ft. in width, where it ends at the door. The forward outboard corner of the locker is mashed down and inboard and the metal around this area is wrinkled.

An arched T frame at frame No. 144 was badly warped into the shape of a curved Z. This was a transverse frame.

The deck in the after half of the platform is pushed down and it forms a trough in the middle running fore and aft. The slope seems equal from inboard to outboard. The trough runs on aft underneath the after bulkhead (frame No. 155) and is pushed away from the bottom of the bulkhead some 20 to 24 in. in the deepest part. The extreme outboard edge and the extreme inboard edge of the bulkhead seemed still intact.

The bulkhead at frame No. 155 is pushed in (aft) and this pushed in part ran vertically as far up as I could see. The deepest part was along the edge of a watertight door at the inboard side of the platform. This deepest part is about 1 ft. deep. The dogs around this door were still holding though the door itself was pushed in with the bulkhead.

From the outboard after edge of the platform I could see an entrance on the catwalk at the main deck level. The entrance was clear as if the door was gone, this was also frame No. 155.

Also at the main deck I could see a large vent and there was another directly below at the upper half deck. These vents were about 4 ft. in diameter and were between frames No. 152 and No. 153. There were two more vents forward, one on the main deck and one on the upper half. They were between frames No. 144 and No. 145. These vents were the same size as the after ones and none of them had covers though the dogs were still there.

The deck of the platform was strewn with debris. Shackles, many water breakers, a large wire cable (2-1/4 in) a life raft and a wire reel. The overhead still had some rafts hanging from it.

I took pictures of all the damage I had seen but I did not have time to inspect the forward end good or the shell and catwalk at the main deck level. Also the top of the ready service locker.

DIVER: COKER, C. W. 269, 55 87, COX, DT

Landed on starboard side of deck and took diver No. 1 lifeline and camera line. He picked the descending weight up and started forward with it. We went along the inboard side of the deck house past two doors that seemed to be in good condition.

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DIVER: COKER (CONT'D)

Diver No. 1 put the descending line in the hole and I started tending him. I took note of an air vent that came out of the hole from starboard. It was slightly warped on end. It was around frame No. 118, I didn't see down into the hole so I cannot tell how it looked underneath. I then secured the descending line to a water main on this inboard side of the deck house with the other bite leading direct to the hole. I then came up.

DIVER: CRESSEY, O. R. 208 75 17, M1, DO

4 August 1947

I descended to the flight deck of the SARATOGA and went forward to the inboard side of the after deck house and went down onto the main deck (compartment B-0209-L). I got some pictures of bulkhead No. 111 and the frame on the over-head where the flight deck was damaged. The main deck was level on the outboard side but it seemed to be sprung down amidships apparently the same as the flight deck. I got a couple pictures of a bulkhead that had a dutch type door, which was almost completely torn off. The only marking on the door was M.A.A. 111. That entire bulkhead was completely wrecked and twisted up. I went forward of this bulkhead but the visibility was so bad that I couldn't get any pictures or notice any damage.

DIVER: BOSTWICK, E. E. 316 56 01, CBM, DO

4 August 1947

Went down as No. 1 diver and took camera with me. As soon as No. 2 diver reached bottom I gave him my lifeline and started towards SARATOGA. As soon as I got alongside SARATOGA I began walking aft. Reached No. 1 shaft and followed it out to where the strut had been broken off. Took pictures of where the strut had been broken off shaft. Then took pictures of where the same strut had been broken off hull. Went over to No. 3 shaft. Took pictures of where the shaft casing had been torn. This place was about 4 or 5 ft. from the fairwater. There was a 2-1/2 in. chain coming down alongside the tear. Went over the shaft to inboard side and walked aft until I came to where strut had been torn off No. 3 shaft. Took pictures of where the strut had been torn off. Also took pictures of where the lower strut for No. 3 shaft had been torn off hull. Started on aft to look at rudder. My lifeline and air hose got fouled in crack of No. 3 shaft. Was told to return to my descending line.

DIVER: WILKINSON, J. P. 658 38 06, SF1, DO

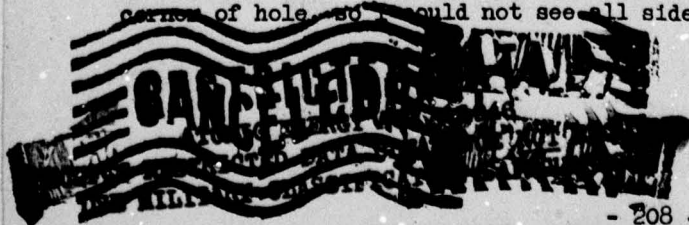
4 August 1947

Descended on flight deck at the after part of superstructure. Followed descending line to hole in flight deck, which was about 40 ft. from the after part of superstructure and 15 ft. inboard of superstructure. Went into hole in flight deck and took a series of pictures of the wreckage.

DIVER: SCHABER, G. B. 329 52 33, TM2, DT

5 August 1947

Landed on starboard side of flight deck, walked about 10 ft. inboard and then down a 20° angle of flight deck which is dropped down about 15 ft. Walked along drop in flight deck forward about 40 ft, came to large opening in flight deck. Visibility was only about 15 ft. I was tending No. 1 diver from after starboard corner of hole, so I could not see all sides of hole.



- 208 -

UNCLASSIFIED

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